Junior Scholastic

Teacher Edition

VOLUME 34 • NUMBER 7
MARCH 17, 1954

Teaching Guides

The Changing Face of America (pp. 8-9)
When Industry Comes to Town (p. 10)
American Industry Bets on Prosperity (pp. 11-13)
Plastics: What Next? (pp. 16-17)
Micawber (pp. 18-19)
Katzenjammer Days (p. 20)

Concepts Developed in the Unit on Industrial Expansion

The expansion of American industry, which is going on today at a faster rate than ever, brings many advantages, through increased production and more goods and more opportunities for all. This expansion also brings many problems, at least temporarily. This is especially true when (as at present) new industrial plants are mostly being located in small and medium-sized towns.

Suggestions for Using the Unit on Industrial Expansion

ROUND TABLE TALKS

Aims: 1. To understand ways in which our country is growing.

2. To realize that school students of today will be part of that expanding pattern.

3. To consider how school prepares for future careers.

To the pupils: When students who are in school now go into jobs in the future, many of them will be working with new materials and methods and those yet to be evolved as well as those already known. In a way they will be like the pioneers who founded our country. They were not sure of what they would find or how they could make the best use of it.

School gives you "tools" with which you are to do this future work. Will you pick one of the following tools and as you read the articles, consider ways in which that tool can be of use to you in some future job? reading, mathematics, science, social studies, written and oral English. *(To the teacher. Add other subjects if desired.)*

Read with a pencil in your hand so you can make notes in the margin to help you recall your thoughts. When the subject you have chosen is called, take your place at the table in the front of the room with others who have chosen the same subject, prepared to discuss your ideas together. One way to start your talks is by finding answers to these questions.

Can you show how each skill is needed in the businesses mentioned in the articles?

Think of your best subject and your poorest one. What jobs would best suit your abilities? Which ones need skills for which you haven't the mental tools?

TOWN MEETING

Aims: To see the problem of industrial expansion in relation to one's own community.

2. To get a better insight into the problems of local government.

To the pupils: A big new industry is coming to your town. The various problems which must be solved are to be discussed in a town meeting. Appoint one of your classmates to act as moderator or chairman. He will state the problem and then open the meeting for suggestions. It is everyone's problem, so you will offer your ideas freely. Use "When Industry Comes to Town" and "American Industry Bets on Prosperity" to guide your discussion.

Before the meeting is held, decide in general discussion the type and size of the industry which is coming. What kind of industry would find advantages in locating in your town?

To the teacher: This offers an opportunity to develop a worth-while project on studying the home community.

Does your town have enough job opportunities?

What problems in housing are most urgent? What plans are under way to meet the need?

Are there sufficient schools? How many children will be entering kindergarten next year? How long does it take to get a school built and operating after it is decided that one is needed?

What problems are there in transportation? Are more buses needed? More trains? What is the parking situation?

Some civic leaders may be willing to discuss these problems with the class.

ADVERTISEMENTS IN THIS ISSUE

Suggestions for a lesson plan based on advertisements in this issue will be found on page 3-T.

Plastics: What Next?

ORAL READING AND QUIZ

Aims: 1. To check on comprehension of material read aloud.

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LOOKING AHEAD WITH JUNIOR SCHOLASTIC

Next issue: March 24

Theme Article: Ceylon—Land of Elephants
Way Back When: Country Store
Freedom Answers Communism: Making sure one group doesn't run everything

2. To give opportunity to build initiative and self-confidence.

To the pupils: Appoint three of your classmates to act as "testmakers." As the article is read aloud by several members of the class, they will make note of various points on which they will later question you. This may be done mentally or by putting check marks in their copies opposite certain portions about which they will question you. After they have had an opportunity to consult together on which questions they will ask, and to plan a method of procedure, they will conduct an oral quiz.

Micawber

To the teacher: Ask someone to look up the quotation of Mr. Micawber's from Dickens' *David Copperfield* and read a few of the speeches to the class.

To the pupils: In order to understand how well the name suited the cat, it is necessary to know the original quotation. The more books and stories and articles you read, the more acquainted you become with well known sayings. We all find times when what someone else has written or said seems to be the best way to express exactly what we mean.

What other famous quotations do you know? Many times people quote from such books as the *Bible* or *Mother Goose* to make a point.

If you copy quotations, enclose them in quotation marks and mention the author's name.

Katzenjammer Days

WRITING AND DRAWING COMIC STRIPS

To the pupils: Some of you can draw very well. Others find writing easier. Pair off in teams to work up one of the comic strips described here, or one of your own invention. Sometimes the pictures alone can tell the whole story.

EVALUATION

To the teacher: Ask each member of the group to bring his favorite comic strip to share with the class. Make clear that these should be humorous—not the adventure or story type. These may be collected in a notebook for the class library or may be sent to a hospital ward.

As he shows his cartoons, let each one tell why it appeals to his sense of humor. It may be that "the little guy always gets the better of the big fellow," or that it is fun to see how much trouble someone like the Katzenjammer Kids gets into.

Political cartoons frequently make a point that would take hundreds of words to get across. Some of these which are on subjects the class has covered may be examined. A good writing exercise is to look at a cartoon, discuss the points that are being made and then write as briefly as possible what the picture conveys.

QUICK QUIZ

Ten Questions for a Five-minute Quiz

1. What island in the Caribbean Sea has self-government but stays under the U. S. flag? (Puerto Rico)
2. What Middle East country has just received U. S. aid in the form of mules? (Turkey)
3. What word do we use to describe a person whose hobby is exploring caves? (Spelunker)
4. In what position is the U. S. flag flown when a prominent person dies? (Half-mast)
5. Name the biggest U. S. steel company. (United States Steel Corporation)
6. The Fairless steel works gets its iron ore from what South American country? (Venezuela)
7. Who wrote the book in which Micawber, for whom the cat in our story was named, appears? (Charles Dickens)
8. Coke is made from what mineral? (Coal)
9. What is the name of the furnace in which iron is separated from iron ore? (Blast furnace)
10. What is the name of a furnace in which iron is made into steel? (Open-hearth furnace)

Tools for Teachers

Alsace

April 7 in *Junior Scholastic*

BOOKS: *Land of Joan of Arc*, by Lillian Bragdon, $2.50 (Lippincott, 1952). *The Young Traveler in France*, by Alexander Reid, $3.00 (Dutton, 1953).

ARTICLES: "Europe's Provinces: Alsace," *Time*, Aug. 10, 1953.

FILMS: *Factories, Mines and Waterways*, 20 minutes, sale, Educational Film Dept., United World Films, 1445 Park Ave., New York 29, N. Y. Heavy industry developed in Alsace-Lorraine because of the area's easy access to sources of raw materials, labor supply, markets. *The Great Rhine Way*, 18 minutes, sale or rent, Gateway Productions, 1859 Powell St., San Francisco 11, Calif. Trip up the Rhine from Rotterdam to Basle; importance of the river to Western Europe's economy.

Answers to Mar. 17 Quiz-word Puzzle

ACROSS: 1-David; 6-contest; 8-Al.; 9-he; 11-defy; 14-aged; 16-F.A.O.; 17-hen; 18-cuter; 20-streams; 22-bu.; 23-end; 24-lb.; 26-art; 28-tee; 29-ear; 31-sod; 32-right; 34-boy.

DOWN: 1-do; 2-an; 3-Vt.; 4-I.E.; 5-D.S.; 6-clef; 7-then; 8-ad; 10-ed; 12-fact; 13-you're; 14-ahead; 15-germ; 19-ten; 20-sure; 21-sled; 22-B.A.; 25-be; 27-tar; 28-tot; 30-rib; 31-shy; 33-go.

Answers to Citizenship Quiz, p. 17

1. BIG STEEL (30 points): 1-c; 2-b; 3-b; 4-a; 5-b; 6-c.
2. MICAWBER THE CAT (35 points): 1-T; 2-F; 3-T; 4-F; 5-F.
3. NOSE FOR NEWS: 1-a; 2-b; 3-c; 4-b; 5-b; 6-b; 7-c.

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Junior Scholastic

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Kites—
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See cover story
p. 6)

MAKE 'EM LOOK EASY

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Where tires have to be good—

It's good to have these

DOUBLE EAGLE
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STUDDED TREAD
Best on slick or muddy roads

Double Eagle—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

ONLY the best tires are good enough for the stepped-up pace of motor biking. For quicker stops and starts, you need a tire that will grip and hold the road, take plenty of bruising punishment, too.

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Next time you need tires, ask your dealer to show you these Goodyear huskies. They're fine for foot-propelled bikes, too. Goodyear, Cycle Tire Department, Akron 16, Ohio.

Always ask for **GOODYEAR** *bike tires*

MORE PEOPLE RIDE ON GOODYEAR TIRES THAN ON ANY OTHER KIND

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To help you build a better America

No matter what career you choose, when *your* turn comes for helping to build a better America, you will find steel a ready and willing partner in progress.

United States Steel is spending approximately $300,000,000 this year to improve its facilities across the nation. It has recently completed the largest fully integrated steel plant ever to be built at one time. Under construction by U. S. Steel is the nation's most modern research laboratory. A goal of many years was realized in 1953 with the development of a way of using taconite to expand our domestic sources of iron ore. And just this January, shipments of ore began arriving from Cerro Bolivar, the new mining operation of a U. S. Steel subsidiary south of the Orinoco River in Venezuela.

It takes a long time and millions of dollars to develop new sources of iron ore. A modern steel plant is not constructed overnight. Clearly, U. S. Steel must work far ahead to anticipate the needs of the nation for years to come. In doing so with energy and enterprise, it does more than protect its own future. It also proves its abundant faith in *your* future.

USS

UNITED STATES STEEL

NEWS ROUNDUP

5 Wounded Congressmen Show Signs of Recovery

As we go to press, doctors report good news about the five U. S. Congressmen wounded by Puerto Rican terrorists on March 1. (See last week's issue.) All five Congressmen show signs of improving. But Representative Alvin M. Bentley (R., Mich.) is still in serious condition.

The day after the shooting, Governor Luis Marin of Puerto Rico flew to Washington, D. C. He called on Congress and on President Eisenhower. The governor, almost in tears, expressed the indignation of his people over the shootings. He said Puerto Ricans are deeply grieved. He called the terrorists "lunatics." Each of the Congressmen lined up to shake hands with the governor. They assured him of the continued "good will of the people of the mainland toward the people of Puerto Rico."

One result of the attack was a tightening of measures to protect the White House and Capitol Building. All visitors must have passes from Congressmen to visit the White House and the public galleries in the Senate and House of Representatives. All passes must be carefully checked by the guards. This had been a rule in the past but was not always enforced.

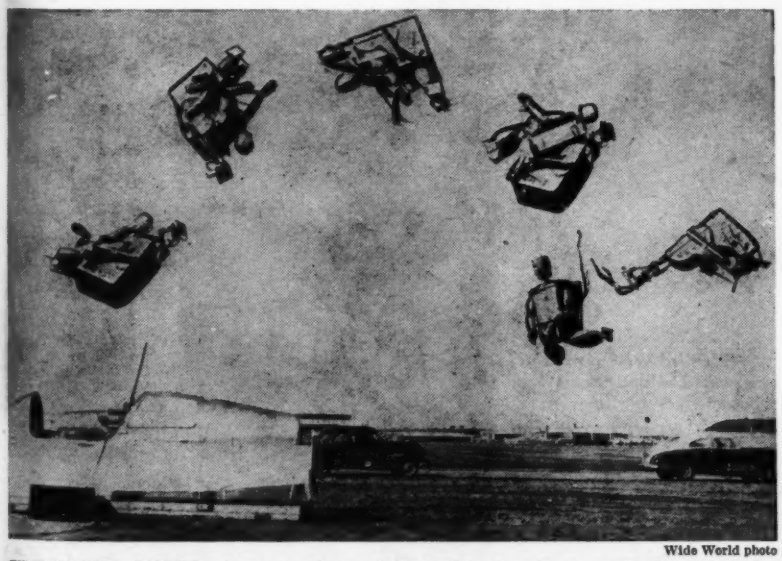
The four Puerto Rican terrorists have been charged with assault with intent to kill and assault with a deadly weapon. All four are scheduled to stand trial shortly in Washington, D. C.

REPUBLICAN PARTY IS NOW 100 YEARS OLD

This week there'll be a big celebration at Ripon, Wisconsin, to honor the Republican party. The party is 100 years old this year.

Ripon says the name "Republican" was first used for the party at a meeting in a small schoolhouse at Ripon early in 1854. A group of 53 pioneer Ripon citizens attended the meeting.

On March 20 this meeting will be re-enacted at the same schoolhouse by 53 citizens of Ripon. They'll kindle a "freedom flame" as a symbol of the party. Near the schoolhouse a white marble building will be built to shelter the flame. Ripon pledges to keep the flame burning for "as long as freedom lives in America."



Wide World photo

FIVE-IN-ONE PHOTO shows testing of U. S. Air Force's new ejection seat for jet planes. Explosive charge blasts seat and dummy pilot out of jet cockpit (left). Dummy somersaults through air, then automatically comes unhooked from safety belt. A real pilot, clear of the jet, would then open parachute and land.

New York Times map

X shows location of Maldive Islands

Maldive Islands Prefer To Be Ruled by Sultan

The Maldive Islands want to have a king again. They are a group of 2,000 coral islands in the Indian Ocean (see map). They are protected by Britain but run their own home affairs and money matters.

For more than 800 years a king ruled the islands. His title was "sultan." The last sultan of the Maldives died in 1951.

The prime minister, Amin Didi, suggested making the islands a republic. This was done on January 1, 1953.

Amin Didi was elected as the first president. But the people did not like his rule. Amin Didi was overthrown last September and sent into exile. He died last January. Recently the Maldives' parliament voted to have a sultan again. The parliament voted that the eldest son of the last sultan take over as ruler.

National Memorial to Go Up For Revolutionary War Dead

Washington Square in Philadelphia, Pa., will become a national memorial to honor unknown soldiers of the Revolutionary War. About 2,000 American patriots are believed to be buried in the square. They are men who died during battles of the Revolution. The new memorial will consist of a life-sized statue of George Washington, in a setting like a town square of colonial days.

President Clears Up Half-Mast Confusion

When a prominent American dies, the Stars and Stripes are flown at half-mast in his honor. In the past there had been confusion about when and how long the flag should be flown at half-mast. Recently President Eisenhower issued a proclamation to end the confusion. He said the flag should be at half-mast:

- For 30 days from the day of death of the President of the United States or a former President.
- For 10 days from the day of death of the Vice-President, Chief Justice, a retired Chief Justice, or the Speaker of the House of Representatives.
- From the day of death until the burial of an Associate Justice of the Supreme Court, a Cabinet member, a former Vice-President, the Secretaries of the Army, Navy, and Air Force, a U. S. Senator, a Representative, a delegate to Congress from a U. S. territory, the governor of a state or territory, or the resident commissioner who represents the Commonwealth of Puerto Rico in Washington, D. C.

The flag also should be at half-mast to honor other prominent dead people. These include U. S. officials, past or present, and foreign officials. Local customs or instructions apply in these cases.

U. S. Mules Serve NATO As Turkish Pack Animals

Mules of the U. S. Army are on duty with NATO, the North Atlantic Treaty Organization. The mules, 5,600 in all, have been sent to Turkey as pack animals. They haul loads in Turkish cavalry and artillery units. The U. S. has sent the mules as part of our military aid program.

NATO is made up of 14 nations. They are the U. S., Canada, and 12 European nations—including Turkey. These 14 free nations work together to build up their defenses. They have promised to help one another in case of an attack on any of them.

The mules for Turkey have been carefully selected. They are among the best ones raised by U. S. mule breeders. Most of the mules came from Mississippi, Alabama, Tennessee, Missouri, Texas, and Oklahoma.

The last shipment of mules, more than 800, came from Fort Reno, Okla. Before their trip overseas, the mules were carefully examined by veterinarians. Each of the mules was as fit as a fiddle. The trip, by ship, lasted 17 days from New Orleans, La. The mules were turned over to Turkish soldiers at either Istanbul or Iskenderun.

JUMP IN SEA

Mules sometimes became balky. A few have broken loose and jumped into the sea while boarding the "mule ship." Soldiers had to dive into the water to rescue the mules. The same thing has happened at the Turkish docks. Then Turkish troops dived in—and came to the rescue.

In addition to mules, the U. S. has sold several thousand horses to Turkey since 1951.

COVER STORY

This week's front cover shows something brand-new in a kite. It's a flying parachute, 36 inches across. The para-kite is made of extra-heavy plastic. It is easy to launch and fly. You unroll it, let the breeze rush into the 'chute—and away it goes. The para-kite is waterproof and weather-proof. (*Photo from Caples Company.*)

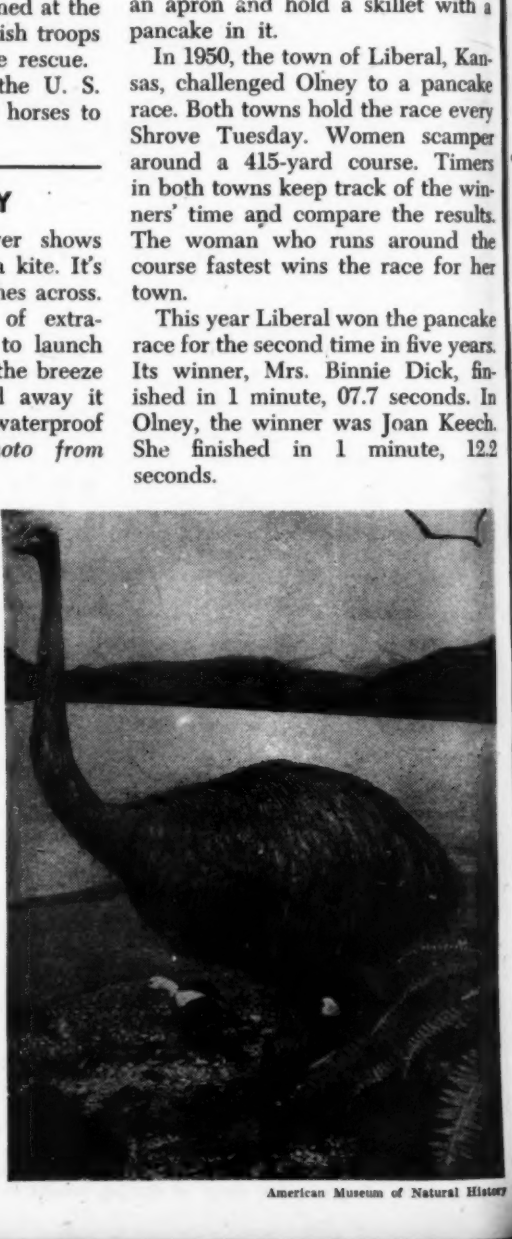
Liberal, Kan., Wins Pancake Race Again

It was Shrove Tuesday, the last day before the fasting season of Lent. A woman was busy making pancakes in the kitchen. Suddenly she realized she was late for church. The woman rushed out of the house with her apron still on. She raced to the church carrying her skillet—with a pancake in it.

This happened more than 500 years ago in Olney, England. Ever since then Olney has held a pancake race on Shrove Tuesday. Women who enter the pancake race wear an apron and hold a skillet with a pancake in it.

In 1950, the town of Liberal, Kansas, challenged Olney to a pancake race. Both towns hold the race every Shrove Tuesday. Women scamper around a 415-yard course. Timers in both towns keep track of the winners' time and compare the results. The woman who runs around the course fastest wins the race for her town.

This year Liberal won the pancake race for the second time in five years. Its winner, Mrs. Binnie Dick, finished in 1 minute, 07.7 seconds. In Olney, the winner was Joan Keech. She finished in 1 minute, 12.2 seconds.



This bird WAS a moa of New Zealand. Moas are believed to have died out in 14th century. Experts say the birds kept wandering into swamps and could not get out again. Bird shown is museum model.

American Museum of Natural History

News in a Nutshell

New York Times map

X marks area of copper mining rush.

Mineral-rich Canada has another treasure of copper. A big copper mining rush is now under way in western Ontario (see map). Prospectors are swarming into Geraldton to hunt for the mineral. More than 6,000 claims have been staked.

What brought on the rush? Word spread fast recently that three men had sold their claims to a mining company. Each man received more than one million dollars.

Blue rain and pink snow surprised people living in Rensselaer, N. Y. Recently at a dye plant vapor escaped from a kettle in which blue dye was boiling. The vapor mixed with rain. Result: blue rain. Last month a vat of pink dye boiled over in the plant. Pink fumes rose high during a snowfall. Result: pink snow. Red snow, colored by vapors from a volcano, recently fell in Benevento, Italy.

The world's largest business, in total value, is the Metropolitan Life Insurance Company. It is worth more than 12 billion dollars. The number of persons who are insured by Metropolitan reached a new high in 1953—more than 37 million.

Hats off to Bill Beck, 24, of Dartmouth College in New Hampshire. Bill, a varsity skier, recently broke his right ankle. Doctors said he couldn't ski again for months. But within a few weeks, Bill was gliding down slopes again—on one ski! He used two cane-like crutches for support. His broken ankle was in a cast.

Science News

Speedy Missile

The U.S. Navy's newest guided missile for defense, the *Sparrow*, flies three times as fast as sound. Sound travels through air at the rate of more than 1,000 feet per second.

The slim *Sparrow* looks like a rocket with short wings. Eight feet long, it weighs 280 pounds. In tests so far it has been fired from a gun on an aircraft carrier. This guided missile would be used to bring down enemy fighters or bombers. It follows a radar beam from the carrier to the target. The Sparrow can make a direct hit on a moving target two to four miles away.

Spelunkers' Delight

Spelunkers are people who like to explore and study caves. Recently a group of 50 U.S. spelunkers, who are also scientific explorers, spent a full week underground. They explored Crystal Cave, which is 100 miles south of Louisville, Ky.

Their leader said the cave may prove to be the world's biggest one. Mammoth Cave, not far away, today is rated as the world's biggest cave. The Crystal Cave spelunkers explored many miles of underground passageways. They found huge rooms where the walls were part coral, fossils, and shells; many high waterfalls; and canyons 100 feet deep.

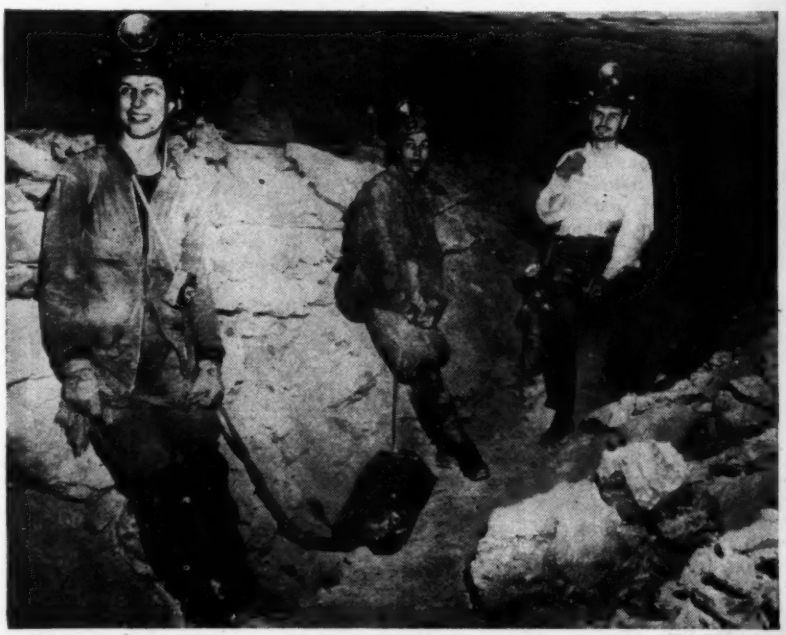
Several of the spelunkers were women (see photo). Said one after the week's adventure was over: "I'd like to spend two weeks there."

St. Lawrence Icebreakers

Every winter a thick crust of ice holds Canada's St. Lawrence River fast in its grip. As the end of winter nears, the Canadian government sends out icebreakers to open channels in the river. Icebreakers are small ships which can smash their way through the ice.

This icebreaking job is not easy. By winter's end, the ice on the river is 10 to 15 inches thick. It can support the weight of cars and trucks. But the thick ice cannot stop the icebreakers.

The icebreakers open channels where the current is known to be swiftest. The current moves the broken ice down the channels. Later, as the rest of the ice melts and breaks into chunks, it moves downstream in these channels. This avoids ice jams in the river. Ice jams can result in floods in spring when the ice begins to melt rapidly. The channels are also used by supply ships.



Wide World photo

Some of Crystal Cave explorers were women. Here two help drag supplies to cave.

The Changing Fa

ABOVE the prairie, a shiny skyscraper; on the desert, a gleaming factory; in the river gorge, a freshly-built dam—these are the sights you see when you travel the U. S. today. New centers of industry are springing up in former farm regions and wastelands.

U. S. companies spent more money last year than ever before for new factories and new equipment. The sum was about $28 billion dollars. Can you imagine a building 500 feet wide and 10 miles long? That's what you would have if all the new factory areas being added by the Ford Motor Company were combined into a single factory. And that's just one company!

Washington Water Power c'o. photo

NORTHWEST: New dam at Cabinet Gorge puts Idaho's Clark Fork River to work. Electricity from region's mighty rivers "sparks" such industries as atomic energy, metals, wood.

Aviation Week photo

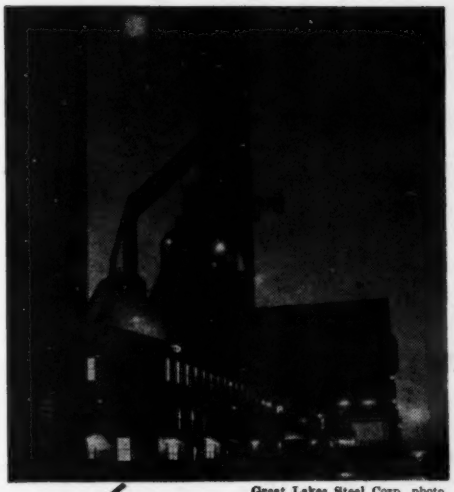
WEST COAST: Newborn Super-Constellations —fresh off the assembly line—huddle around big Lockheed plant. Aircraft industry, new to California, is biggest in the state, pays $760,000,000 in wages yearly. Factory jobs in California have increased by 150 per cent since 1939. Other big industries are food processing, petroleum, chemicals, ships, movies.

SOUTHWEST: A "prairie skyscraper" *(model shown in photo)* is going up at Bartlesville, Okla., site of the state's first oil well. It will house offices of an oil pipeline firm and be visible for 20 miles. From Southwest deposits of oil and other minerals come raw materials for new chemical, metal-working, guided-missiles and military aircraft industries.

Face of America

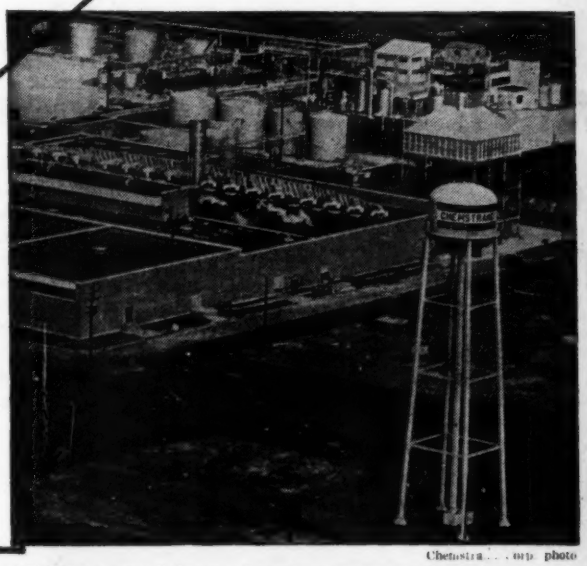
Most of the new factories are going up in two areas. These are the eastern states from Maryland northward, and New England. The first U. S. factories were built in this northeastern region. A lot of money is being spent to build factories in other parts of the U. S., too.

In these pages you will see many maps and photos. They show some of the new industries. They show how these industries are "changing the face of America." New factories bring more people, more business, and more opportunities. These pictures will show you that the U. S. is still young and growing. We Americans still have faith that our future will be bright.



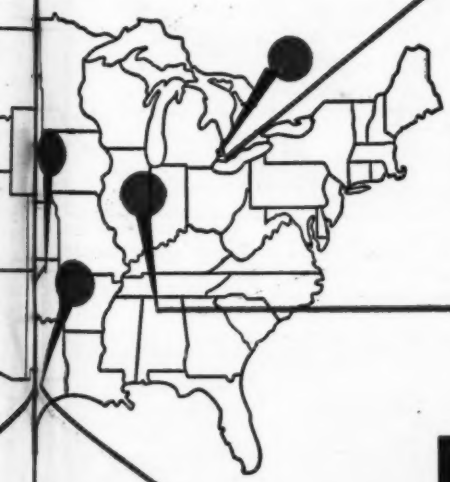
Great Lakes Steel Corp. photo

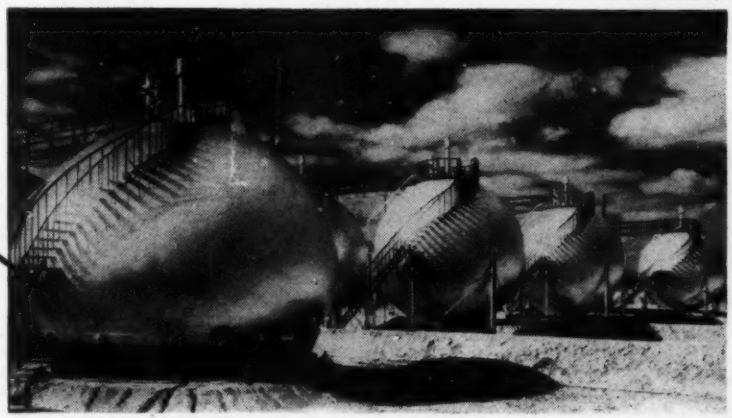
GREAT LAKES. Eerie glow of this new blast furnace lights the night sky over Detroit. This area produces most of nation's autos, trucks, tractors.



Chemstrand Corp. photo

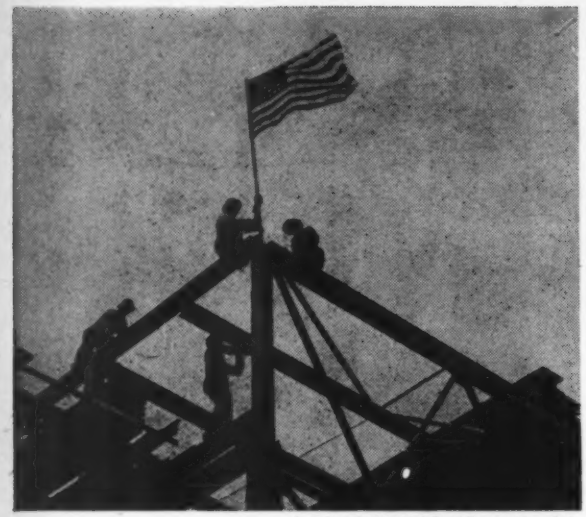
SOUTH: A metal forest of tanks, towers, and smokestacks is this new plant for synthetic textiles. Long neglected by factory builders, the South is fast becoming a new industrial empire.





Shell Oil Co Photo

GULF COAST: Fantastic, silvery bubbles stud the Texas landscape. They're metal storage tanks for natural gas—important new source of energy for industry. New industries along Gulf produce chemicals from oil and gas, and treat ores shipped in from Latin America. Texas may soon lead all states in aluminum output, is growing fast in steel.



American Institute of Steel Construction photo

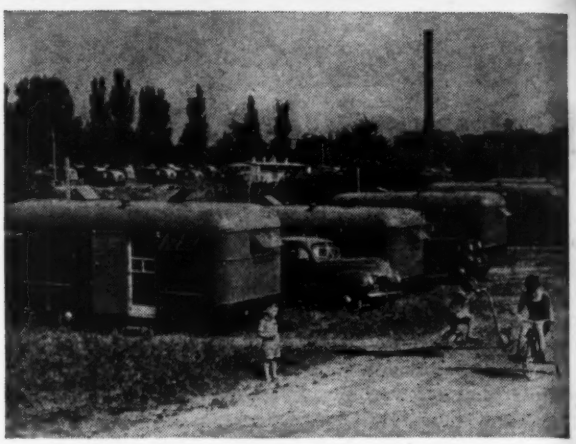
1. ENTER INDUSTRY: When construction workers "top out" a new factory building, they often raise "Old Glory" to celebrate. The arrival of industry brings tough problems to a small town, which its local government must try to solve.

When Industry Comes to Town

● Industry is "moving in" on Main Street, U. S. A., as never before. Business firms are putting two out of every three of their new plants in medium-sized and small towns. In 1940 this proportion was only one in two.

Why the switch? "In the smaller community," say industrialists, "operating costs and taxes are lower, living is easier, and employees are better satisfied."

What happens when a big industry comes to town? See picture story on this page.



2. HOUSING: Workers flock into town to fill jobs in new plant. Trailer camps spring up, then mass-produced homes (as in Levittown). Increasing population will need more water, sidewalks, street lights, sewers, schools, etc.

Herblock in Washington Post

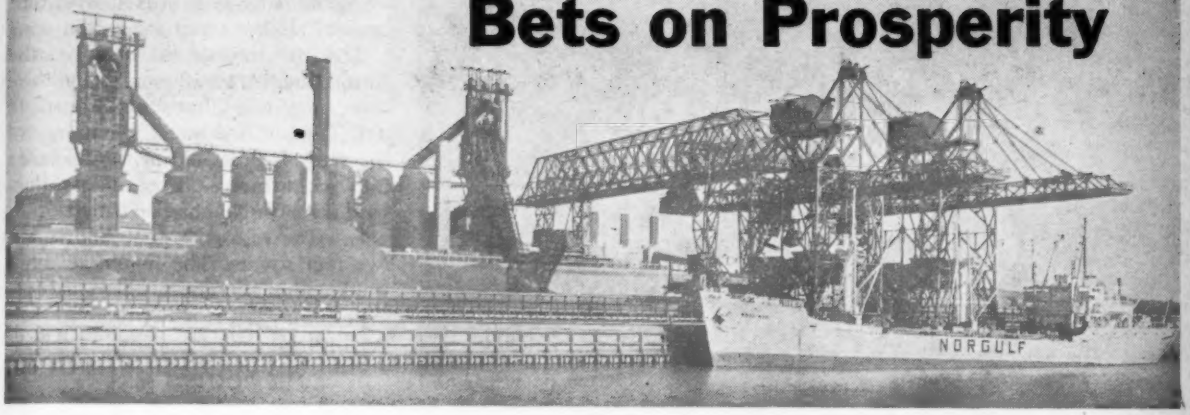
3. SCHOOLS: *"I'm in the fourth grade, second shift, third layer,"* says girl in cartoon. Booming industry causes overburdened schools.

5. OPPORTUNITY: Industry brings benefits, too. Payrolls pump spending money into local pockets, make stores hum with business. New job careers open for high schoolers (see photo). Fewer feel it necessary to leave for "the city."

Herb Kratovil photo, courtesy Business Week

4. TRAFFIC: Incoming industrial workers bring their cars. Traffic often chokes up. Town may adopt parking meters to control traffic and raise funds for street improvements, new signal lights, a bigger police force.

American Industry Bets on Prosperity



U. S. Steel photos

Norwegian ship unloads iron ore at Fairless Works. Ore is dumped *(left)* near blast furnaces *(in background)*.

THE FACTORIES of the U. S. turn out far more goods than the factories of any other country. U. S. industry is the biggest in the world.

And our industry is growing even bigger. That's because the men who run our industries have faith in America's future. They believe that the U. S. will keep on growing and will stay prosperous.

They are so sure, in fact, that they are "betting" on it. They are betting on America's future by spending huge sums of money for more factories and new equipment. By expanding in this way, U. S. industry will be able to turn out more and more goods. These goods can be sold only if Americans are prosperous and can afford to buy.

Our industries are "permanent pioneers." They are never satisfied. They are always trying to serve more people and serve them better.

In the article that starts on this page, let's look at an example of just what happens when an industry expands.

STEEL is the most important metal we have. Look around you. How many steel objects can you find? In your kitchen are steel stove, pans, and refrigerator. The faucets, shower fixtures, and most of the plumbing in your bathroom are steel. These are just a few examples.

Here is a harder question. How many objects can you find that were NOT made with steel tools or machines, and were NOT delivered to you in vehicles built of steel? This list won't be very long!

The biggest steel company in the world is United States Steel Corporation. This company is so huge that it's called "Big Steel." It produces about one third of all the steel made in the U. S.

In 1950 "Big Steel" decided to expand. It planned a brand-new plant with all the latest and most modern methods and machines.

This was to be the biggest of all "fully integrated" steel plants. In a "fully integrated" plant, the whole process of making iron and steel goes on in one place.

A plant of this kind covers a large area of land. So, as a first step, the company bought 4,000 acres of farm land. This site lay along the Delaware River between Trenton, N. J., and Philadelphia, Pa.

Building of the new plant began on March 1, 1951. By Christmas, 1952, the job was finished. The plant was named after Benjamin Fairless, chairman of the U. S. Steel company.

His seven-year-old granddaughter, Nancy Fairless, helped start the plant. She lighted one of the two huge blast furnaces. Then production began. The plant had cost $400,000,000 to build. Ten thousand construction workers had labored for millions of hours.

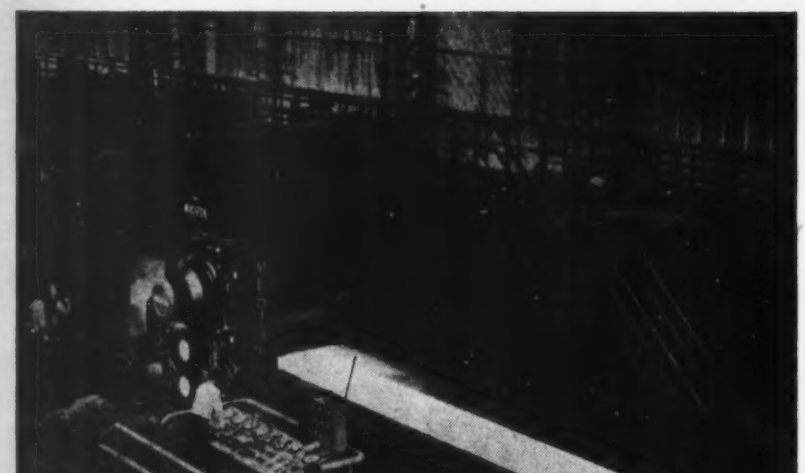
LIKE MAKING CANDY!

Making steel is something like making candy. The materials must be melted. The work must go on while the materials are in a liquid form, or at least, while they are very hot. This means that, once you start making a batch of steel, you can't stop until the whole batch is finished. So the Fairless Works, like other large steel plants, runs night and day. Each group of workers stays on the job until the next group takes over. Three shifts of workers come and go every day.

To find out for you what happens at the Fairless Works, a *Scholastic* editor visited the plant. Suppose you could go with him. What would you see?

You'd start down by the Delaware River. Here great ships deliver the iron ore. The docks are so big that two or three ocean-going vessels can tie up there at the same time.

Great scoops swing down into the ships' holds. Each scoop bites out a 22-ton mouthful of reddish rock and dumps it on the bank. A moving con-



U. S. Steel

HOT STRIP MILL: Hot sheet steel *(foreground)* whizzes through this machine at speeds up to 2,300 feet per minute. Visitors to modern steel mills are often surprised at how clean they are, and how few workers they have (6,000 in three shifts at the Fairless Works). Automatic machines do a great deal of the work.

veyor belt carries the ore to the blast furnaces nearby.

The ships come from Venezuela, in South America. In Venezuela, U. S. Steel owns a mountain that is almost completely made of iron ore. The company thinks that it will take more than a hundred years to use up all the iron in this mountain.

The first shipment from Venezuela arrived in January. Until then, most of the iron ore used at the Fairless plant came from the Mesabi Range. This is a group of low hills in northeast Minnesota. Lake boats and railway trains carried the Mesabi ore to the Fairless plant.

ORE + COKE + LIMESTONE

What is iron ore? It is a rock that is mostly iron oxide. This means that the iron has united with oxygen. Oxygen is one of the gases in the air we breathe. Ordinary rust is a form of iron oxide.

The steel plant's first job is to separate the iron from the oxygen and other impurities. This is done by crushing the ore and "cooking" it in a blast furnace.

Two other materials are needed. One is crushed-up limestone rock. The other is coke. Coke is made by heating coal in tall, thin "coke ovens." This drives off gases and vapors. The Fairless plant captures these gases and uses them to produce useful by-products. One is naphthalene. Mothballs, plastics, and textiles* can be made from it.

What is left in the oven is coke. It is mostly carbon.

The coke travels from the ovens on a mile-long conveyor belt. The moving belt carries the coke to one of two great blast furnaces. Coke, limestone, and iron ore are dumped into the top of the furnace. Hot air is blown into the furnace. The coke burns fiercely. The temperature rises to 3,000 degrees Fahrenheit.

The iron and the oxygen in the iron ore clutch each other tightly. But at 3,000 degrees, they finally let go. Impurities in the ore rise to the top and are drained off. This material, called "slag," can be used for road-building and insulation.

The iron is heavier. It sinks to the bottom. Every six hours the bottom of the furnace is opened. Out pours 300 tons of white-hot, molten iron.

Some is led off to be made into cast-iron products. But most of it flows into huge torpedo-shaped ladles. These act like thermos bottles. They keep the iron hot while flat cars carry it to the "open-hearth" furnaces.

The open-hearth furnace does the next big job. It turns the iron into steel. The nine open-hearth furnaces at the Fairless plant are shaped like rectangles. In these furnaces, the iron is again heated until it is white-hot. It is mixed with clean scrap iron and with certain chemicals.

About half of all the steel made in the U. S. comes from scrap. This consists of old pieces of steel, such as automobiles and machinery that have been thrown away. Scrap is collected from junkyards all over the country. Using scrap saves iron ore.

The iron stays in the open-hearth furnace eight to 12 hours. By this time, impurities have been burned out. The purified metal remaining is the steel. It flows out of the furnace into giant molds. They shape the steel into huge chunks called "ingots." These are six feet high and two feet square. The ingots go into "soaking pits." There the steel is kept hot until it is ready to go to the "rolling mill."

THE ROLLING MILL

There the most exciting part of the story begins. The steel moves into a windowless building so big that 30 football games could be played there at once. It is hot and noisy. The men who work near the metal wear goggles to protect their eyes. Sometimes vast showers of sparks spurt from the steel. It reminds you of a pinwheel on the Fourth of July.

A constantly moving track carries the white-hot ingots of steel. They are run back and forth through a series of powerful rollers. The rollers flatten them.

This job calls for great skill. One of the men who runs a slabbing machine is George Lowstetter. He sits in a little glass-enclosed box called a "pulpit," high above the machine. He must pull exactly the right levers at exactly the right time in order to control the rollers. Inch by inch, the rollers squeeze the ingots into thin red slabs. If he does something wrong, thousands of dollars' worth of material may be ruined.

Many of these slabs are rushed to the "hot strip mill." Here the slabs, now colored a bright cherry red and still very hot, are flattened into a continuous ribbon of metal. The steel races along at speeds up to 2,300 feet a minute. The metal is trimmed, scraped, and cleaned. Cascades of water spill over it to cool it. Finally—half a mile from the starting point—strips of thin, silvery-gray steel plate come out. These strips are rolled into coils four feet high. Electric magnets pick them up and move them to other parts of the plant.

*Means word is defined on page 24.

Some of these coils go into the cold-rolling mill. There they are turned into sheet steel for such uses as auto bodies, railroad cars, and refrigerators.

Other coils are coated with tin. Giant shears cut the metal into sheets about three feet square. Steel from these sheets goes to make the "tin" cans you buy at the grocery store.

We've told you what goes on inside the Fairless plant. But what goes on OUTSIDE the plant is also part of the story of what happens when an industry expands.

Other businesses and industries are moving into the Delaware Valley. The Fairless plant helps to attract them. Many of the industries use steel. They want to be close to a plant that makes steel. New businesses are coming to serve the growing population of the region.

As more and more factories and businesses start, more and more workers must find homes. Where do they live? What kind of life do they have?

TWO NEW TOWNS

Two brand-new communities have sprung up in the past three years.

One is called "Fairless Hills." It is only three miles from the Fairless plant. Nearly all the people who live there are steel workers. About 2,000 houses have already been built at Fairless Hills. Eventually there will be twice as many. Each house has three or four bedrooms and modern equipment. Yet they cost only $77 a month to rent. Steel workers can easily afford that.

The other new community is called "Levittown." Eight thousand houses have been built there and another 8,000 are planned. They will provide homes for 65,000 people. These people will have many conveniences right in their own community. Levittown has two large shopping centers, several swimming pools, 10 baseball diamonds, and dozens of playgrounds.

These new communities are crowded with children. Many new schools are being built to take care of them.

When industry expands, the whole community expands. And when industry expands, more goods are produced for the whole nation. This means more comforts and a better living for us all.

U. S. Steel

BEST IN BASEBALL: Fairless Hills, the new town that houses Fairless steel workers, had 16 Little League baseball teams last year. Here are the "All-Stars," —the best players of the "American League"—shown with their coaching staff.

BRAND-NEW TOWN: Three years ago this was farm land where spinach and asparagus was raised. Now this is a street in Levittown, Pa. As many as 200 families a week move into this community that will eventually house about 65,000 persons.

GENERAL ELECTRIC'S ANSWER TO . . .

ONE of our teacher friends wrote us recently. Among other things his letter said, "At our school we have Shakespeare's plays on records. We can't get our boys and girls to read them any more."

That set us to thinking. We had always assumed that everyone liked to read if only for entertainment's sake. We were sure that everyone had to read, simply to learn the things that go to make up our day-to-day lives whether it's how to run a store, or how to put up a TV antenna, or how to make an outdoor fireplace. We had thought that, sooner or later, everyone has to go to the library to look something up.

We did a little checking and found, among other things, that Michigan State College thought it necessary to tell each of its freshmen: "Since about 85 per cent of all study activity depends on reading, it is undoubtedly your most important means of learning in college." Apparently, some boys and girls can get as far as college and still not realize the importance of reading.

We tried to imagine what it would be like at General Electric if no one did any reading. We can design a machine to operate by a record-playback that "tells" it what to do, but we don't envision a machine that can read our mail or reports.

We decided this idea wouldn't work very well. But the more we thought about it, the more we realized how important reading is. We put some of our thinking on paper. Here it is.

Everybody reads for learning or entertainment. That's not a startling statement, but it is a basic, enduring truth.

From our experience at General Electric we know how much we depend on reading. In a sense our company is like a school or college. Working at a job is a continuous process of learning. New things happen every day. New products are developed, new sales fields are opened up, better ways of doing a job are discovered. To us, reading is the most important means of learning.

Scientists in all free parts of the world exchange information because they know that co-operatively they can move along their researches faster. Salesmen need advance information about what design engineers are dreaming up. Financial men read statements about new tax policies so they can forecast their effect on company business. Employee relations men need to know the newest thoughts on benefit plans and retirement age. Plant managers must keep up with their company's policy.

Most of this information is obtained by reading and by digesting what has been read. It's no good to be off base a yard when a printed message is taking the place of oral instruction.

This is reading for learning—not entertainment—but the fact is that many men find themselves so interested in the things they have to read that they forget the whodunit or adventure story they might otherwise have picked up.

Industry, to survive today, is quite aware that performance is the criterion of the individual's worth. Never in the history of industry has "marrying the boss' daughter" been of so little personal value as it is now. Or belonging to the right lodge or golf club.

To build a hard-hitting team, industry places responsibility upon key personnel. The men and women of this group are moving constantly toward more exacting (and exciting) positions. These are the people—believe us!—who can read and speak and write concisely, clearly, interestingly. Absorption of knowledge through reading comes first.

We were talking in the office the other noon about the late A. R. Smith. A few of us remembered him vaguely as a man who wore a black derby and

who was one of the world's foremost steam-turbine authorities. Unlike most of his fellow-engineers, he had no college education. His "college" was a course of study with a correspondence school. For him, 100 per cent of his study activity depended on reading.

We do not believe that men of narrow learning have the understanding to bring along their successors. In fact, without a grasp of their company's purposes and obligations, they cannot understand its place in the vast pattern of national life. A man's mind is his eyes to see ahead.

Your teacher, we think, will confirm the following belief. Reading is variety itself. No one author, no one magazine's editorial staff has a corner on interpretation or final truth. All ideas are in transition especially in America, and by wide reading you are having the fun of accepting and rejecting and putting two and two together. You experience the luxury of becoming a thinker instead of a yes man. Such were the industrial pioneers 100 years ago who read in one of our most important technical magazines that there wasn't much of a future for electricity, yet who went ahead to establish the electrical age.

Another real dividend paid the reading man is his growing ability to take part in business or social discussion. Although the purpose of reading is not to show off in conversation, the reader is "in the know" and can listen wisely and speak his own piece to advantage. Often the strong, silent man—on the other hand—is a still water not running very deep.

If we want to know, in our spare time, how to bind a book, how to identify evergreen trees, how to mix up and bake a cheesecake, how to build a summer home, we go to the library.

Whether we are technical or business men, we are eager to keep up with published knowledge on many subjects: new alloys for jet engines, legislation on taxes, color television, social security—the list is endless. We are so close to the challenging demands of these years of technical progress and worldly unrest that we must keep our minds in high gear.

Yet we are aware that there are people who can't be communicated to, except through the medium of pictures. If we sound cranky, it's because we ourselves are not immortal; we just want to make doubly sure that every high school boy and girl in America, who will move into our positions, will be mentally prepared to absorb our contributions, build on them, and thereby keep our American system intact.

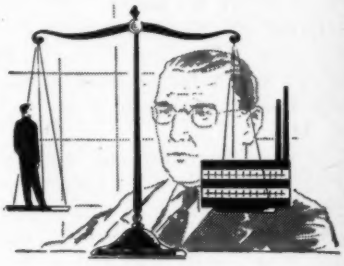
In the flood of school and college graduates coming to industry for jobs, we are not looking for bookworms. We don't want you to stick up your noses at the tribulations of the Dodgers, "doing-it-yourself," and the other non-reading pursuits that make for a happy, human life; but—what do you know?

Do you know your American history? If you know that a communal economic system was established in the early years at both Plymouth Colony and Jamestown, do you know why that system burst at the seams? Was Florida one of the thirteen original colonies? Are you a little ashamed of your brother American when he can't give a TV quizmaster the name of a single member of the President's cabinet? Don't put down the empty look on the victim's face solely as stagefright!

Ignorance is the father of apathy. If you expect to love the children that will be yours tomorrow, you had better heed a statement like this: "In a world that has seen Socialism, in some degree, spread throughout nearly all the major nations, America cannot permit her young people to take their blessings for granted and become indifferent to how those blessings have been made possible. The indifference or apathy that stems from ignorance causes young people to have little if any interest in defending our basic American principles which are under attack."

The leaders of peoples who would destroy us tell the masses to read—the party line. Here, we are free to read even the words, the arguments of our enemies. In fact, in America, the book or pamphlet your local library does not have is still obtainable; your librarian knows how to bring you almost any book cataloged in any library anywhere.

Why are there adults living in these exciting times who are uninformed about things that affect all our lives? Mainly, they do not read.



Why are there still a few young Americans in our schools who do not know the score? Same answer.

Is reading a bitter medicine that you have to get used to? You answer that one. We are prejudiced!

Why read? Almost all that is worth knowing is in words. It takes an easy familiarity with reading and a tremendous appetite for recorded knowledge—past and present—to keep in step with these fast-moving times.

Our high school English teacher used to say to us: "We are what we read." Later, an annoyed college instructor said, as we struggled over a long passage: "It's painfully true that the way not to become a fathead is to fatten the mind."

These were hard words, but in them was an elementary truth: If you liken your mind to a container, it is the only one we know of that the more you cram into it the more it can hold.

Your English teacher knows how to make you a better reader. With your co-operation, he will help you develop good reading habits. He will open up some everlastingly long avenues of fun and profit. One day you will be grateful for his help and pleased that you had good-enough sense to consult him. You can solve almost any problem if you know how to read it.

GENERAL ELECTRIC

SCHENECTADY, N. Y.

Plastics: What Next?

By TONY SIMON *Special Reporter for Junior Scholastic*

EVER hear of anyone painting a boat *before* it's built?

Impossible? No, not really. It's being done every day in the U. S. You can see it for yourself at the Beetle Boat Company of New Bedford, Mass.

The same company can build a 24-foot cabin cruiser in *ONE* day.

The secret behind all this is that Beetle boats are no longer made out of wood or metal. Now they're being made from plastic and fiberglass.

Pound for pound, a plastic and fiberglass boat is stronger than steel. It's watertight, worm-proof, rustproof. It won't crack, warp★, or rot. And it can't be easily dented or crushed.

Once such a boat is painted it stays painted. You never have to stroke a paint brush over the boat again. That's because the first coat of paint remains as a *permanent part* of the boat.

Here's what I saw during my recent tour of the Beetle plant for *Junior Scholastic*:

A plastic and fiberglass boat is made in a mold. The mold is a metal shell built to the shape of the boat's hull★. The first thing a Beetle worker does is spread wax on the inside of the mold. (The wax makes it easy for the finished hull to be pried loose from the mold later.)

Then the worker sprays a special paint on the wax. That layer of paint will be on the outside of the boat when it's completed. So the boat is now painted before being built!

After the worker finishes painting the boat, he starts to "build against the paint." The picture below shows how that's done.

HOW IT'S DONE

First the worker spreads out mats of fiberglass on the paint. Then, with an air gun, he sprays a plastic called Laminac over the fiberglass. After that, the worker lays down another layer of fiberglass mats. He sprays that layer with plastic. He adds a third layer of fiberglass and sprays plastic over it. The hull is now finished.

The hull is from one quarter of an inch to one inch thick. Within 24 hours it dries at room temperature. Then the mold is turned over and pried loose from the finished hull. Extra parts, such as seats, rails, oarlocks, can be bolted to the hull.

"At first I couldn't get used to this fast and easy way of building a boat," Richard H. Gee, Beetle manager said. "Our company had been making wooden boats since 1791. First we laid the keel.★ Then we attached ribs to the keel, planked her up, put on hull plates, and decked her over. The *last* thing we did was paint her. But now we do everything in reverse. It's painting her first that still seems strange to me."

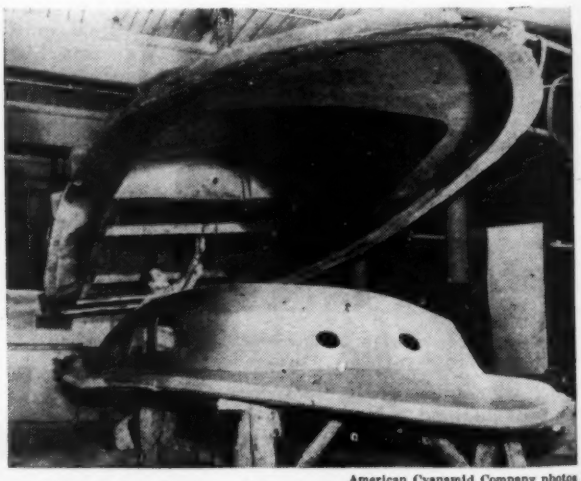
"Are plastic and fiberglass boats really strong?" I asked.

"Strong? I'll say they are," answered Mr. Gee. "Before we decided to change over from wooden and metal boats, we put several sample boats through severe tests. We tried hard to damage or destroy them."

Each boat was exposed to a long soaking in sea water and then to a baking in the sun, Mr. Gee explained. The boats were moored in ice. They were buried in sand and mud. Men ran them into pebble beaches, drove them head-on into docks. Some were dropped from helicopters. Others were hit by .45 caliber shells fired at close range.

"Every boat came through these tests without any serious damage," said Mr. Gee. "So we decided to make plastic and fiberglass boats. We've made more than 5,000 of them since 1947. They've been shipped all over the world. And they're becoming more and more popular in U. S. summer camps, city parks, and recreation areas. Quite a

1. Worker of Beetle Boat Company is building a cabin deck for a 24-foot plastic and fiberglass cruiser. He sprays the plastic on fiberglass in mold. Deck is already painted.



American Cyanamid Company photos

2. The cabin deck has three layers of fiberglass mats and plastic. Deck dries at room temperature in 24 hours. Then mold is turned over and lifted free of finished cabin deck.

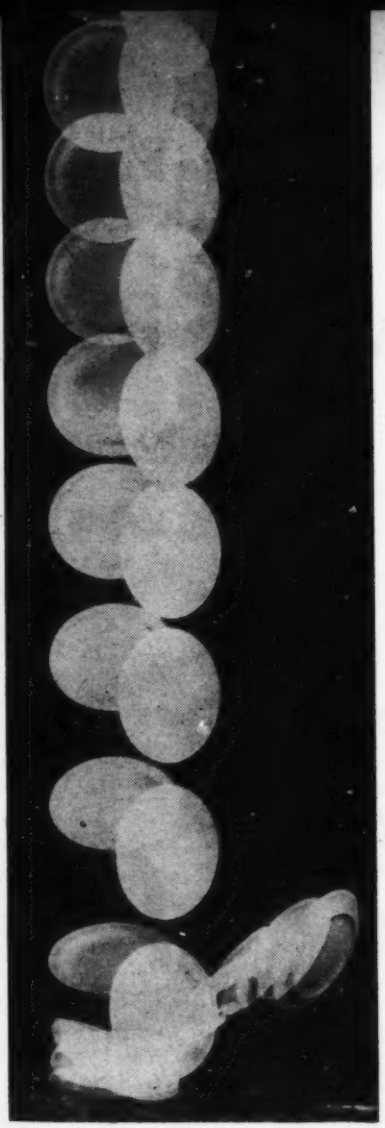


Photo shows two plastic plates dropping 8½ feet. They bounce but don't break.

few companies are making them now."

I asked Mr. Gee about other new developments in plastic products.

"One thing I can tell you," he said, "is that plastic and fiberglass boats will be much larger in years to come. We started out by making a small rowboat to hold four persons. Today we make a 24-foot cruiser, weighing 3,200 pounds. It has a deck and a high, roomy cabin. Mr. Beetle, president of our company, says someday soon we'll be making 45-foot cruisers."

As we toured the plant, Mr. Gee answered my questions about plastics and glass fibers.

"Yes," he said, "there are many different kinds of plastics. But they all can be put into two main groups. One is called *thermoplastics*. The word *therme* is Greek for 'heat.' And *plastics* comes from a Greek word meaning 'fit for molding.' So *thermoplastics* are man-made materials turned soft and fluid by heat, which can be shaped easily. They harden when they're cooled. But when thermoplastics are reheated, they become soft again."

A thermoplastic material is like paraffin. When it is soft you can pour it on top of a jar of jelly to seal the jar. When the paraffin hardens, you can take it off. It can then be reheated and used to seal another jar. Plastic brushes, combs, salad bowls, lamp bases, lamp shades, toys, raincoats, shower curtains are frequently made from thermoplastics.

"The second main group is called *thermosetting* plastics," Mr. Gee went on. "These plastics are permanently set—hardened into shape—by heat. Once they cool and harden, they can't be softened again by heat and reshaped."

A thermosetting plastic is something like an egg that has been fried. You can't change the egg back into a liquid form again, beat it, and use it to make an omelet. Laminac, the material used by the Beetle Boat Company, is an example of a thermosetting plastic. Laminac also was used for making sets in recent movies, such as *Julius Caesar* and *Kiss Me Kate*. Other products made from thermosetting plastics are: dishes, cups, table tops, radio and TV cabinets, handles for electric tools, trays.

Plastics have been making headlines in recent years. For example, U. S. auto makers are experimenting with plastic and fiberglass for bodies. In one test a plastic car was mashed into a boulder. The front fenders and hood were dented. But within a few hours, workers were able to build new fenders and a hood for the car.

The U. S. Army has developed a plastic snowsuit. It keeps soldiers warm on the coldest days. The Army also has a plastic material which can be used as a strong and lasting bandage.

Mr. Gee told me that fiberglass is made from melted glass pulled out into threads. "Each thread is 10 times finer than human hair but stronger than piano wire," he said. "The thread can be woven into fireproof cloth. The cloth is used to make drapery, awnings, and so on."

"But I don't see any spools of fiberglass here," I said.

"That's right," said Mr. Gee. "Fiberglass can also be chopped up into small pieces and worked into a mat of cloth, paper, or cotton. We use cotton fiberglass mats here."

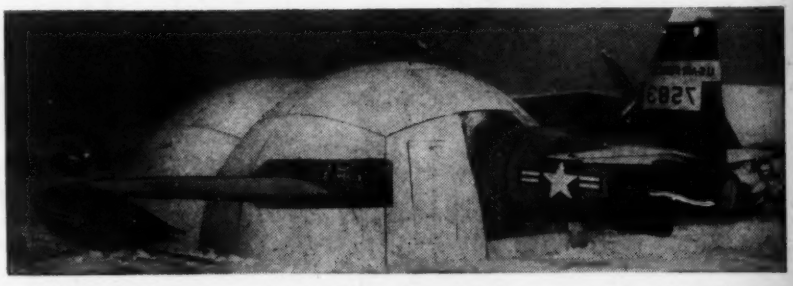
TEST OF STRENGTH

Mr. Gee picked up a scrap piece of plastic and fiberglass.

"This combination of materials is one of the strongest known to the world today," he said. "A block of it 12 inches high, 12 inches wide, and 12 inches long would be able to support the weight of a U. S. warship. The block wouldn't crush. A car could be hung from the middle of a thin bar of this plastic and fiberglass. The bar wouldn't snap."

We toured the plant and watched the men. Some worked over long tables covered with layers of fiberglass. They used power cutters to cut out parts for the boats to be built the next day. Other men were fastening "extras" to boats which had been finished the day before.

"The plastics industry is booming," Mr. Gee said, as we walked to his office. "Today there are more than 5,000 companies in the U. S. turning out plastic goods. More than 200,000 persons work in these companies. And 160 million Americans, just about everyone in the U. S., owns something that's made of plastic."



This plastic hangar can be fitted around a plane to protect it in cold regions.

*Means word is defined on page 24.

Bully Beef was a big, tough tomcat. He thought the backyard of the house

MICAWBER

A short story by RAY HARRIS

next door was his territory. Then Sooty and Micawber moved in.

WAR broke out the night we arrived.

The trouble was, apparently, that Bully Beef had always looked on the backyard of the house we'd just bought in the same way that a bunch of gangsters regard certain parts of town—as his territory.

Our two tomcats, newly freed from their box, stalked round the yard, sniffed its nine gum trees★, and took possession of it in the name of themselves. Then they whipped up on the fence and looked down into Bully Beef's yard, probably thinking that they might as well annex★ that, too. But their first sight of Bully Beef removed that idea. The fellow certainly was a tough tomcat, tough and big, and they could see the murder in his slitted eyes. They cushioned down into the long grass together and came up and sat together on the bottom step of the back porch, apprehension★ in every whisker.

The whole trouble with our chaps, of course, was that they'd got used to soft living and now they were practically sissy. Sooty was undersized and very particular about his appearance, always sponging down his white waistcoat and sponging Micawber's for him as well. Moreover, he always stood up when anyone entered a room—a perfect little Lord Fauntleroy, you might say.

Micawber, the other chap, was a tabby. He was polite, too, but he was big and spongy and bone lazy, and so stupid that you had to push his head down hard on a piece of meat before he got the idea that it was there and that he had your permission to eat it; and, from packing himself politely out of the way under traymobiles★, bookcases or chairs, he'd got so that he couldn't relax unless he had a roof over his head, so to speak. He'd sit under the traymobile by the hour—just sit as if he was waiting for something to turn up; which, of course, was why we'd called him Micawber. In short, they were such a refined, helpless couple of cats that Bully Beef's mouth fell open and stayed open when he saw them.

He didn't waste time starting to enjoy himself, though. At 9:45 that first night he ambushed Sooty in the rank grass behind the laundry and had him cut to pieces before we could get to him. Inside an hour Sooty couldn't put even one foot to the ground, and, without nursing, he'd certainly have been done for.

Micawber was puzzled by him. He stayed near him all night, telling him bedtime stories, I suppose, and thinking hard in between. He was still puzzled next morning. And for a chap who'd never had to think and had never wanted to think, that must have been a strain all right.

Well, about the middle of the afternoon he must have thought a stroll would clear his brain a bit. He snooped through and under the long grass, down the full length of the yard and across and then started back. He was about half-way back when there was a swish and Bully Beef shot up out of his ambush.

IT WAS a beautifully timed spring, and Micawber didn't know what hit him till he was on his back with Bully Beef astride of him. All we could see was Bully Beef's tabby back as he started tearing our chap up. Next minute Micawber somehow got clear. He shot up the steps and right in amongst us. Bully stopped at the steps and looked up obliquely★, the way gangsters look, and he made it plain that the murder was only postponed. Then he spat through his teeth and strolled off.

Micawber oozed under the rails of a porch chair while we threw things at Bully Beef and missed him. Then Micawber climbed out and went in and looked at the unhappy Sooty on the cushion we'd fixed for him. When Micawber looked up it seemed to me that there was just a flicker of intelligence in his eye, as though the fat-headed old softy had got around at last to the idea that what had happened to Sooty was what had very nearly happened to himself. But then he sighed, as much as to say, well, perhaps something would turn up to improve the situation, and went and packed himself in under the traymobile. He didn't look puzzled any more, though; just sat there as if he was waiting for something to turn up.

He was still there at bedtime, looking like a soft, tabby ball; so, as it was a hot night, I left the back door open a bit and switched off the lights and went to bed.

It was about half daylight when I heard a series of death squawks that told me plainly that Bully Beef was now committing the second half of his murder. I pelted down the hall in my bare feet and out the back door. The bellowing came from out of the grass jungle, and I thought I saw Bully Beef astride of his victim, tearing and slashing. This time he had Micawber pinned down hard by the throat, and he was carving him with his hind claws, tossing his fur away behind in little clouds that floated over the grass. Now and then Micawber would get enough breath to bawl for help, and then Bully's teeth choked him quiet again. I jumped the steps and snatched up a rake. The murderer was too interested to see me. In one more leap I was out into the wet grass and raised the rake high—but I kept it raised, my mouth open a foot.

It wasn't Bully Beef doing the murdering. Bully was down under, bellowing for police protection. But he had only a whimper left by this time and Micawber let go his throat and started in to chew his hind legs. And then the old idiot saw me. He straightened at once and stepped back politely. Bully choked, gasped a couple of times, then rolled over and got on his feet. He wobbled and fell, got up again, wobbled on to the path and zigzagged along it till at last he staggered round the corner of the house.

When I looked down again at Micawber, he was packing himself comfortably into a nest roofed over with tall grass tufts. By the look of the nest he'd been in it quite a while.

In fact you'd almost think he'd spent the night there, waiting for something to turn up.

★Means word is defined on page 24.

ABOUT THIS STORY

Ray Harris was the author of last week's short story, "Thoroughbred." Here he tells a cat story, which also takes place in Australia.

Micawber, of course, was named for the famous Mr. Micawber in Dickens' *David Copperfield*. Mr. Micawber was lacking in foresight and practically always unlucky. But his faith never wavered—that if he waited long enough something would turn up. As for the Micawber in this story . . . well, read it and see.

Katzenjammer Days

"ACH, those Katzenjammer kids once more! Already again they make TROO-OOO-OOBLE!" Those words were spoken by a gardener in a comic strip of 1897. He was talking about the fun-loving boys, Hans and Fritz. The "Katzenjammer Kids" was the first comic strip series to appear in a U. S. newspaper. And it's still going strong.

From the beginning, the Katzenjammers were always getting into mischief. One strip shows the Katzenjammers at supper. Mama Katzenjammer is serving hot soup to the boys. A cat is chasing a mouse under the table. Hans throws his fork at the mouse. The fork hits Fritz in the foot. Fritz jumps up. This makes Mama pour the soup over his head. Then Mama sees the mouse and jumps on the table. Fritz swings a broom at the mouse. Mama bumps into Fritz. He hits Hans with the broom. Hans jabs the cat's tail with a fork.

The strip ends with everyone wrapped in bandages. Mama gives the boys a lecture on table manners. And the mouse thumbs his nose at the cat and the boys.

Another popular comic strip of the early 1900s was called "And Her Name Was Maud." It described the adventures of Maud, a goggle-eyed mule. Her kick was as powerful as dynamite. (See strip below.)

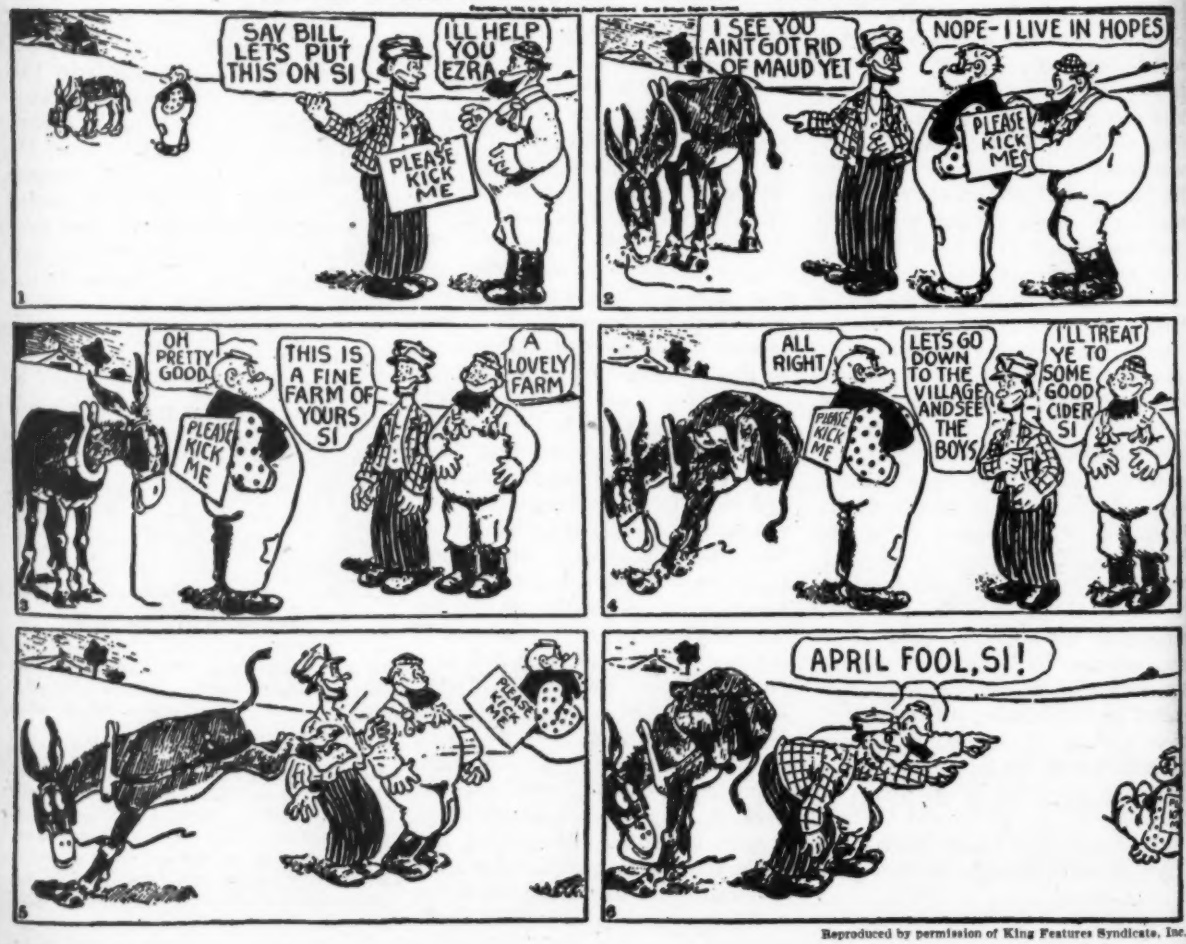
Cartoons had appeared regularly in U. S. newspapers since the 1860s. But the earliest drawings were not comic strips. There was usually just one cartoon. It was seldom funny. It was about a serious news event.

In 1896 the first comic cartoon, the "Yellow Kid," came out in the New York *Sunday World*. The cartoon, about a mischievous boy, amused people. Another cartoon about him soon appeared. Soon other comic cartoons appeared – Buster Brown, Foxy Grandpa, Little Nemo.

The first regular comic pages of newspapers were in color. They appeared once a week, in Sunday papers. Boys and girls pinned a new name on the Sunday papers. They called them the "funnny papers." Soon everyone began to call comic pages, "funnies." The name stuck.

From the start, the "funnies" were popular. Americans like to laugh, even when the joke is on them. So the "funnies" became a new reading habit. Some of the early comic strips, like Mutt and Jeff, or the Katzenjammers, still are big hits today.

AND HER NAME WAS MAUD!



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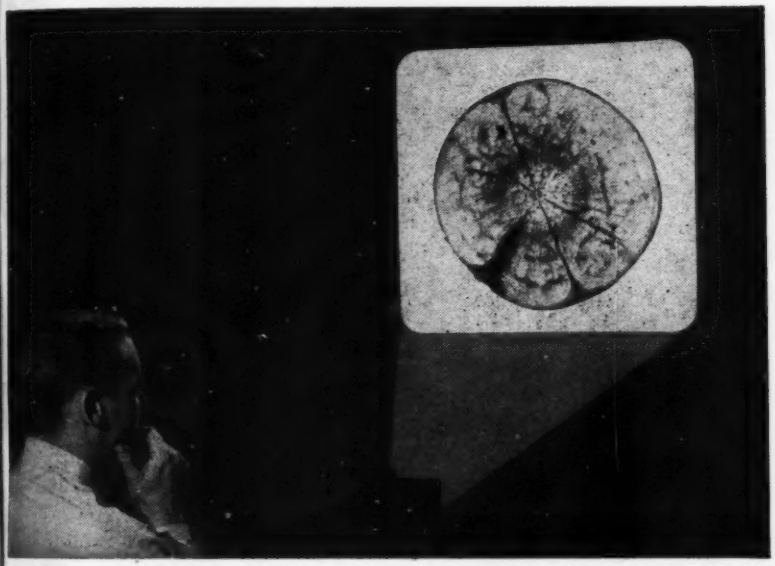
SCIENCE IN ACTION

Building American Industry

Rome wasn't built in a day, and neither was American industry. It grew through the efforts of many trained people. The experts agree that American chemical industry, for example, will continue to grow rapidly during the next ten years—if it has a sufficient number of scientists and engineers. The high-school students who take up careers in science and engineering today will be an important part of the industrial growth of tomorrow.



SCIENTISTS ARE NOT TOO PROUD to learn from the most ordinary things in the world. Here is a Du Pont scientist studying a magnified cross section of a carrot, in order to learn about the mystery of cell growth. A research scientist cannot always predict what the results of his studies will be, but he knows that the information he obtains in the laboratory is helping to build American industry.

TITANIUM is a new and interesting metal which is helping to make better products for American industry. It performs many special jobs better than materials which we previously had. It has a high resistance to corrosive chemicals and is strong in proportion to its weight. For example, the air compressor disks in some jet engines are made of titanium. Stainless steel could be used here, but the parts would be heavier and would require a heavier mounting. The plane would then have to have a more powerful engine and larger wing surfaces. With proper use of titanium, in places where strength is required, planes can be made lighter and smaller.

3-D WORKS like the old-fashioned parlor stereoscope of the gay 90's—except that "polarized" light is used. Two separate pictures are thrown on the same screen by two projectors. The light waves in one picture are polarized in an up-and-down direction, while those in the other are polarized from left to right. Without special glasses, you see one hazy picture. The "Polaroid" spectacles these people are wearing act like filters and allow each eye to see the picture from only one projector. The mind blends these two images to give the impression of depth. Du Pont manufactures a chemical known as polyvinyl alcohol, which is used in making the lenses for 3-D spectacles.

Questions students ask Du Pont

Does mechanical engineering offer many job opportunities at Du Pont?

—C. Y., Ohio

Yes. Except for chemical engineers, Du Pont employs almost as many mechanical engineers as all other engineers put together. Hundreds of mechanical engineers are hired to design equipment and plants, and to see that they keep working properly.

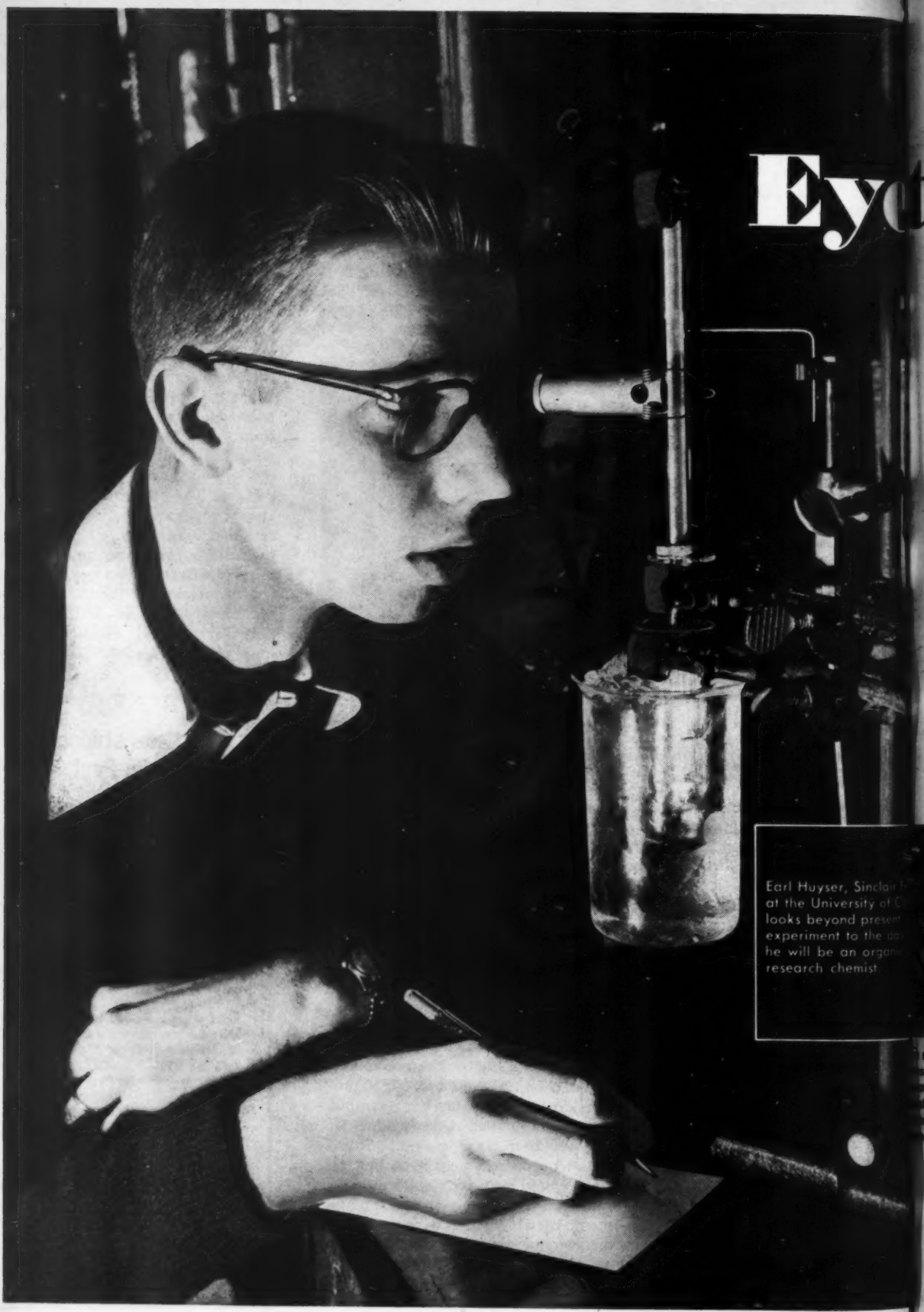
Send your questions about career opportunities in science to "Science in Action," E. I. du Pont de Nemours & Co. (Inc.), 2521 Nemours Building, Wilmington, Delaware.

Watch "Cavalcade of America" on Television

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY



Eyc

Earl Huyser, Sinclair
at the University of C
looks beyond presen
experiment to the da
he will be an organ
research chemist

to the future

Earl Huyser is more than a talented student and future organic research chemist. In his way he is a personification of American Industry's faith in the future, as expressed in the development of young scientists.

Earl is one of 14 promising graduate students currently conducting research projects at 14 universities under the Sinclair Fellowship Program. Under the program, the recipient and his research project are selected by the university. Projects are usually "pure," or non-commercial, research and the results are added to the pool of general scientific knowledge.

The Sinclair Fellowship Program is just one way in which the Company looks to the future. Under a company-wide expansion program, known as the Plan for Balanced Progress, the Company invests substantial sums for future growth. To date, the Company has invested over $250 million to develop crude oil production, over $150 million to improve marketing facilities plus substantial investments in pipe lines, refineries, tankers and other phases of the oil business.

Important investments in the future, certainly, and productive ones as well – but never quite as satisfying as the investments in the Earl Huysers of yesterday, today and tomorrow.

route to lab, Earl ...es tablet commem- ...ing spot where the ... self-sustaining ...trolled nuclear chain ...ction took place.

Earl puts in about 10 hours a day at the lab plus home study — still finds time to serve as vice president and secretary of the chemistry department's student affairs board.

Wife Barbara picks out appropriate cereal for energetic spouse. As this issue goes to press, young couple has 6-weeks-old daughter, Nancy Lou.

Earl at blackboard during seminar. His advising professor, Dr. W. H. Urry, is seen 4th from right.

Sinclair Oil Corporation, 600 Fifth Avenue, New York 20, N. Y.

SINCLAIR
A Great Name in Oil

WORDS TO THE WISE

HOW WORDS CHANGE

gossamer. Fairy-tale princesses are often described as wearing *gossamer* gowns. The word *gossamer*, as we use it today, means "filmy, very delicate." This word is also used as a name for the very light, fine-spun cobwebs that you'll sometimes see floating in the air.

To find the origin of the word *gossamer* we must go back to Germany and the celebration of the feast day of St. Martin. St. Martin's Day comes on November 11, and the early Germans used to celebrate this day with a feast much like our Thanksgiving dinners. But instead of turkey, the Germans ate goose.

November was the best season for eating goose. By that time, the geese were fat and ready for cooking. November itself was known as "the time of the goose."

In Germany, as in the United States, there was often a spell of mild, summery weather in November. We call such a late spell of pleasant weather, "Indian summer." The Germans called it "goose summer"—because it was the time when the fatted geese were killed.

If you've ever been up early in the morning on an "Indian summer" day, you may have noticed a number of fine cobwebs on the grass and in the air. Such cobwebs are typical of this kind of weather. The early English used the German name for the season. They called these webs "goose summer webs." This was later shortened to *gossamer*. Today we still use the word *gossamer* as a name for the kinds of cobwebs you find in Indian summer. And we also use it as a name for anything that is filmy and delicate, like a cobweb.

Here's How

If you remove all the vowels from the word *gossamer*, you get a combination of letters that looks like this: gssmr.

How many words can you identify by their consonants alone? Try yourself out on the following list of nine words—minus their vowels—that appear in this week's "How Words Change":

cbwbs _____

dlct _____

dscrbd _____

clbrtn _____

shrtnd _____

Thnksgvng _____

ntcd _____

Nvmbr _____

smmry _____

STARRED ★ WORDS

Words starred ★ in this issue are defined here.

annex (a-NEX; a as in "at"). Verb. To seize possession of.

apprehension (app-ree-HEHN-shuhn; a as in "at"). Noun. Feeling of distrust, or a fear that something unpleasant is going to happen.

gum tree. Noun. A tree which gives out a sticky, clinging sort of sap known as gum. This gum is used for many industrial purposes.

hull (Rhymes with *dull*). Noun. The frame or body of a ship. It does not include the masts, sails, or rigging.

keel (Rhymes with *feel*). Noun. Long timbers or metal plates extending along the center of the bottom of a ship.

obliquely (uhb-LEEK-lee). Adverb. Not in a straightforward way. Sidewards or at an angle.

textiles (TEHKS-tihls or TEHKS-tiles). Noun. Cloth made by weaving. The textile industry includes all factories that weave yarns into fabrics.

traymobile (TRAY-moh-beel). Noun. A kind of table on wheels. The table usually consists of two levels or trays. It is mounted on wheels so that it can be moved from room to room. Traymobiles are used in restaurants and private houses to carry food.

warp (WORP). Verb. To become twisted out of position, or lose proper shape.

Junior Writers

Spring and Her Beauty

Spring is a fairy that is always dancing round,
Casting her magic spell above and on the ground.
With fluffy clouds like dancers in white,
And flowers below making everything bright.
The babbling brook that is laughing all the time,
With her ripples like giggles all in rhyme.
The birds have their chorus so sweet to the ear,
What singing they do, so melodious and clear.
When nights grow long and days grow short,
We always give to spring a thought.
The blue skies at night like velvet spread,
And the abundance of stars sparkling overhead.

Spring is very busy, 'tis plain to see,
Displaying all her wonders for you and me.

Maida Selig, Grade 7
Hunter Jr. H. S., New York, N. Y.
Teacher, Mrs. D. Warren

Three Birds

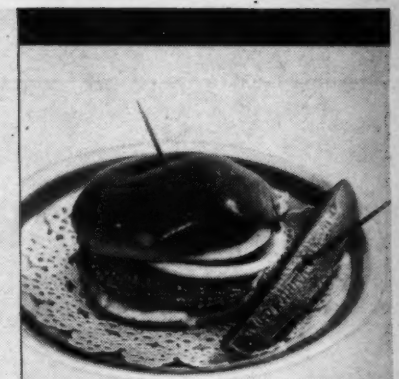
I saw three birds abreast, wheeling leisurely in great circles, the movement of six wings synchronized and perfect. Whitest white and softly lucent as they momentarily held the morning sun and then winged away into the distance, birds and sky inseparable. Had I been an ornithologist, I would have identified these creatures on the wing by name, and explained something of their habits. Seeing them in the eyes of weather prophets, I might have announced them as omens of fair weather or of rain. As a philosopher perhaps I would see them as symbols of peace and harmony. But, being none of these, I saw them only as three white birds in a morning sun and thought them beautiful.

Juanita Sexton, Grade 9
Norcom School, Portsmouth, Va.
Teacher, E. P. Bradley

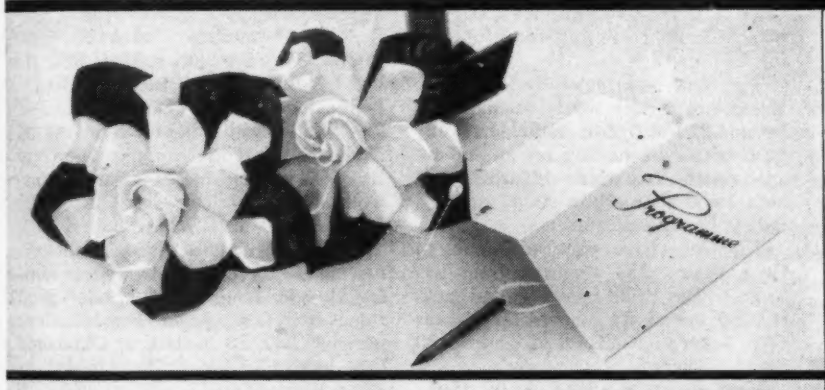
Mr. Wind

Mr. Wind is a gruff old fellow,
Sometimes he's mean and sometimes he's mellow.
He bites children's noses
Or freezes their toeses,
He makes them sneeze and gives them colds.
That's gruff old Mr. Wind.

Carolyn Lee Bennet, Grade 6
Kaysville (Utah) School
Teacher, Mr. L. R. Lindeman



After the prom . . . it's Coke Time



The party's over, but not the fun. Now it's Coke Time . . . time to savor the flavor of the world's most popular soft drink. Sparkling Coca-Cola, blend of delicious good things from nine sunny climes. A matchless taste, a supreme quality. Have a Coke and be happy.

"COKE" IS A REGISTERED TRADE-MARK.

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New Faces for 1954

"I'M DOING great, folks," the baseball rookie writes from spring training camp. "Today I put one over the palmettos in left field, and another homer of mine knocked a coconut right out of a tree in right."

Each letter gets more and more enthusiastic. To his family, the young hopeful appears to be a Ruth in the rough. Then one day there comes a wire: "This afternoon they started throwing curve balls. Will be home soon."

Morning glories abound on the citrus circuit. Only a few will ever make the majors. But it's fun looking them over and trying to figure which WILL make the "Big Top." Here's how the 1954 crop of rookies appears to us.

National League

Destined for Dodger stardom is Don Zimmer, firebrand shortstop. Though he played just 81 games before fracturing his skull at St. Paul last summer, his sensational play won him the American Assn. MVP award. He hit .300 and slugged 23 homers.

Keep an eye, too, on Dodger outfielder Sandy Amoros, who paced the International League with a .355 batting average and 23 homers at Montreal.

You can't help but notice the Braves' Gene Conley, stringbean pitching 6'8" giant. Gene had a 23-9 record at Toledo, led the American Assn. in strikeouts with 211.

The Cards forked over $100,000 for shortstop Alex Grammas, Red farmhand, and $75,000 in cash and players for Guillermo (Memo) Luna, Mexican southpaw knuckleballer.

Grammas hit .307 for Kansas City and is an elegant glove man. Luna came from San Diego, where he posted a 17-10 record and a glistening ERA of 2.69 with a sixth-place team. Outfielder Tom Burgess, .346 walloper at Rochester, and first baseman Tommy Alston, .297 at San Diego, could also be factors.

Though the Phils boast of Roberts and Simmons, they can always use another mound ace, and one may be Tom Casagrande, bonus fastballer who went 16-7 for Schenectady. With one spot open in the outfield, Danny Schell, .333 at Schenectady, and Stan Palys, .331 at Spokane, are top candidates.

Even before the season begins, Ray Katt has been named Giant catcher. Once a batboy for Minneapolis, Ray whacked .326 there last season, including 28 four-baggers.

The Reds look hopefully to Charley Harmon, live-wire third baseman who batted .310 at Tulsa; outfielder Wally Post, whose 33 homers set an Indianapolis mark and whose 120 rbi's were high for the American Assn., and Ed Bailey, bonus kid catcher.

The Cubs have some good ones in Gene Baker, .284 shortstop from Los Angeles, and Ernie Banks, second sacker who belted 23 homers for Kansas City. Baker's flawless afield, and his 20 round-trippers indicate power.

Pirate fans may want to watch Gerry Lynch, exciting infielder who socked .333 at Norfolk; Dale Long, Hollywood first baseman voted MVP of the Pacific Coast League; Curt Roberts, second baseman for Denver, and George O'Donnell, 20-game winner at Hollywood and PCL "Rookie of the Year."

American League

Familiar names, but nonetheless rookies, outfielders Bob Cerv and Bill Skowron are determined to stick with the Yankees this season. At Kansas City two years ago, Skowron hit .341, 31 homers. Last summer he dropped to .318, and now the Yanks are considering him as a first base possibility. Cerv batted .317 at K.C.

The Indians' most appealing newcomer, Rocky Nelson, has been with three National League teams, but he's a rookie in the junior circuit. At Montreal last summer he blasted 34 homers, 133 rbi's, had a .310 average. In the Little League World Series, he hit .672!

The White Sox are banking on outfielder Bill Wilson. The 200-pound slugger poled 36 homers at Memphis in 1950, was in service two years, then picked up where he left off by whaling 34 roundtrippers in '53.

What a story Jack Harshman will make if he earns a mound berth with the Chisox! Once a first baseman in the Giant chain, and up briefly with the parent club, southpaw Jack turned chucker, was 23-7 at Nashville.

A 6' 6" menace, Frank Sullivan, catches one's eye with the Red Sox. He had a 9-6 mark, 1.78 ERA, at Albany. Outfielder Robert (Dusty) Broome, .306 at Louisville, hopes to sweep up American league hurlers. One of Broome's outfield mates, Charley Maxwell, also has a chance. He clouted 23 homers, drove in 107 runs, batted .305.

Baltimore's Orioles, trying to make a new home for themselves after enduring the St. Louis blues, expect good things from first baseman Frank Kellert, who hit .289, 23 homers, at Oklahoma City; outfielder Jim Fridley, husky ex-West Virginia tackle who cracked 26 homers at San Antonio; Rocco Ippolito, who clouted 25, also at San Antonio; Karol Kwak, Tri-State League hitting champ at Anderson, S. C., with .359, Rinold Duren, 12-12 at San Antonio.

The Tigers are praying that fastballer Bob Miller, a five-figure bonus chucker from Morton High (Berwyn, Ill.), can do a man-sized job.

Good bet for rookie of the year is Vic Power of the A's, who can play first, third or the outfield. With Kansas City, Vic led the American Assn. in batting, .349; hits, 217; total bases, 324. He hit 16 homers.

Bob Trice, 21-game winner at Ottawa, including 21 complete games and four shutouts, is another hot prospect with the A's.

The Senators can boast of the smallest player in the majors, 5'3¼" Pompeyo (Yo-Yo) Davalillo, a shortstop. He batted .305 at Charlotte, finished last season with .293 for 19 games with the Senators. He's been playing professional ball for two years, hails from Venezuela. Outfielder Bruce (Squeaky) Barmes, .320 with Chattanooga, may make it.

—ZANDER HOLLANDER

Right This Way

A girl from Horace Mann School, Alva, Oklahoma, asks:

What should you do if a boy you like seems to lose interest in you?

The best thing is to keep on being friendly with him and to set about making other friends for yourself. While you're doing this, ask yourself: "Was it my fault he stopped being interested in me?" It's easy to take a friend for granted when you know him well. Then sometimes the friend comes to feel that you aren't really interested in him. If you really like someone, you should try to remain as interested in him as you were when you first met.

However, people's tastes do change, especially when they're growing up. And sometimes, as your interests change, you grow apart from your friends. But you can still keep on being friendly. And who knows—in a few more years you may grow back together again.

A boy from Samuel Gompers School, Philadelphia, Pa., writes:

I lent a book to a friend over a month ago, and he hasn't returned it. I'd like to have it back. How should I go about reminding him?

Just go up to your friend and say pleasantly, "If you've finished the book I lent you, I'd like to have it back sometime this week"—or something like that. If he says he hasn't finished the book, you may decide to let him keep it for another week or so. But it's your right to ask for it back.

When someone borrows a book—or anything else—the lender is doing him a favor. He should show his appreciation by returning the property as soon as possible, and in good condition. Otherwise people aren't likely to lend him things again.

A boy from Camden County H. S., South Mills, N. C., asks:

If friends are visiting your house, is it polite for you to read or study while they are there?

When you are a host or hostess, you should give your attention to your guests. You may be busy with homework or chores when your friends drop in. If you cannot possibly stop your work, you may explain this to them and ask them to drop by later. But if you ask them in, it is up to you to give them your attention.

The driving rain lashed at bike and rider...

He was just three miles from home when the storm hit, suddenly... hard! The splashing rain covered the road and ran swirling down the gulleys. Some way to end a bike hike, Marty thought. He shrank a little further into his rain-soaked jacket and pedaled on, uncertainly....

★ ★ ★ ★

"Next time I'll take a bus!" Marty kidded, relating the experience to his U. S. Royal Dealer. "That riding in the rain is for ducks!"

Mr. O'Brien laughed. "And for fellows who forget to check weather reports," he added. "But when you're caught like that, I guess there's nothing to do but keep on riding.

"Of course, good riders know enough to slow down and be alert for cars and pedestrians. Remember, you can't see or hear as well in the rain.

"And watch out for fallen leaves. They're slippery any time, but particularly when wet. Matter of fact, almost *any* wet surface is slipperier than a dry one.

"To really play it smart, though, I'd be sure I had on a set of tough U. S. ROYAL CHAIN TIRES. They have the *exclusive built-in skid chains* that grip and hold better in *any* weather. And they roll easier, too. They're so good, they're America's most popular bike tire!"

US RUBBER

U.S. ROYAL

For safer riding... ride on Royals

Get to know *your* friendly U. S. Royal Dealer. He's made bicycling his business, so he has plenty of good ideas for you. And, of course, he has U. S. Royal Bicycle Tires... the finest bike tires you can buy.

UNITED STATES RUBBER COMPANY

549 East Georgia St., Indianapolis 6, Indiana

VOLUME 34 NUMBER 7 MARCH 17, 1954

Citizenship Quiz

RATE YOURSELF: 90-100—Good work! 80-89—Better than average; 70-79 — Fair; Below 70 —How about more work?

1. BIG STEEL

Underline the correct ending to each of the following statements. Score five points for each. Total, 30.

1. The first U.S. factories were built in
   a. California.
   b. the deep south.
   c. the northeastern states.
2. The men who run our industries are spending huge sums of money to
   a. provide food for people without jobs.
   b. buy more factories and equipment.
   c. destroy goods nobody will buy.
3. A "fully integrated" steel plant is one
   a. which the workers in the plant own themselves.
   b. where the whole process of making iron and steel goes on in one place.
   c. where men and women work side by side.
4. Large steel plants
   a. run night and day.
   b. shut down in the summer.
   c. employ more workers than all other factories put together.
5. Materials used to make steel include
   a. slag.
   b. limestone rock and coke.
   c. frozen oxygen.
6. Fairless Hills is
   a. a famous baseball park.
   b. the place where Washington crossed the Delaware.
   c. a new town to house steel workers.

My score_____

2. MICAWBER THE CAT

Put T in front of the true statements, F in front of the false ones. Sentences are based on this week's story "Micawber." Score seven points for each. Total, 35.

__1. Bully Beef had always looked on our backyard as his territory.
__2. Micawber was the most energetic cat anyone ever saw.
__3. After his fight with Bully Beef, Sooty couldn't even put one foot to the ground.
__4. Micawber cut Bully Beef to pieces in their first fight.
__5. No one ever saw Micawber again after his second fight with Bully Beef.

My score_____

3. NOSE FOR NEWS

Imagine you are a traveling reporter. Check the correct ending to each of the following statements. Score five points for each. Total, 35.

1. This map shows the location of a big
   a. copper mining rush.
   b. floating bridge.
   c. iron ore range.
2. Now on duty with Turkish forces of NATO are
   a. British lions.
   b. U.S. mules.
   c. Mexican cows.
3. The North Atlantic Treaty Organization is made up of
   a. 60 nations.
   b. 48 nations.
   c. 14 nations.
4. President Eisenhower has issued a proclamation telling when and how long the Stars and Stripes should be
   a. stored aboard Navy ships.
   b. flown at half-mast.
   c. flown at parades.
5. The Navy's newest guided missile, the *Sparrow*, can fly
   a. to the moon.
   b. three times as fast as sound.
   c. at the speed of light.
6. People who explore and study caves are called
   a. spellers.
   b. spelunkers.
   c. spelters.
7. Every Shrove Tuesday, Liberal, Kansas, and Olney, England, hold a
   a. bike race. b. auto race
   c. pancake race

My score_____ Total score_____

NEW MOVIES

✓✓✓✓Tops, don't miss. ✓✓✓Good. ✓✓Fair. ✓Save your money.

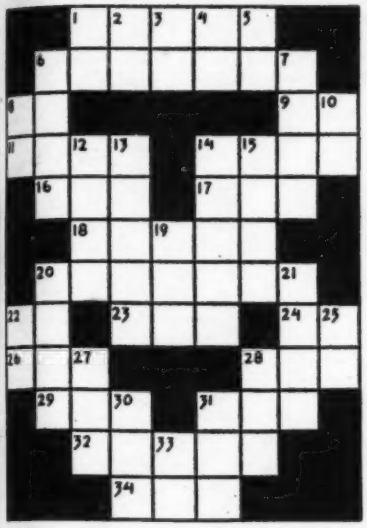
✓✓✓**THE HORSE'S MOUTH** (Mayer-Kingsley). This is an English comedy which was filmed largely in Ireland. *The Horse's Mouth* is a refreshingly unusual little fantasy. It's about an oracle which can foretell the future. At first the oracle keeps his activities to forecasting the weather or telling old Mrs. Lanahan where she lost her glasses. But soon a London journalist arrives on the island. For a lark, the oracle agrees to furnish him with news tips. The question arises, how good is it for us to know about the future in advance? The film provides a sensible answer, and a highly enjoyable hour until the answer is reached. Michael Medwin and pretty Virginia McKenna are the stars.

✓✓✓**HIS MAJESTY O'KEEFE** (Warners). Everybody knows just about what to expect from a Burt Lancaster movie—plenty of action and not too much plot. And that's just what you get in *His Majesty O'Keefe*. Burt is a sea captain washed up on a South Sea isle sometime around 1870. The island is rich in coconuts, the basis of the profitable copra trade. But the natives don't want to pick coconuts. They want to dance their native dances and just be left alone. Burt has a plan, though. And before he's finished, he's not only become rich—but also king of the island. Opposition from the natives and the plottings of rival traders keep him constantly in motion. The film was photographed in Technicolor and its genuine South Pacific backgrounds are extremely handsome. Lovely Joan Rice plays opposite the star, and does a fine job.

✓✓**THE EDDIE CANTOR STORY** (Warners). Practically all the stars are having movies made about them these days. Unfortunately, Eddie Cantor's story is not at all unusual. Like many others, it's made up of early failures and later successes. Nor does the big choice he must make between family life and a career ever seem very important. At least, it's not drastic enough to justify all the tear-filled scenes which are dragged into this picture. Keefe Brasselle, who plays Cantor, does a great deal of eye-popping and pursing of lips, but very little acting. There is, however, a great deal of music. (It's Cantor's own voice you hear singing the songs that he made famous.) If you're curious about what your parents considered tops in entertainment some 30 years ago, this is it.

You'll find Cantor's singing quite a lot different from the music that most of us enjoy today.

quiz-word PUZZLE



When you finish the puzzle, write out the full saying on these lines.

_____

_____

_____

Here are the clues: These words were the motto in the War of 1812 of 1 Across Crockett, the famous hunter and politician of the frontier. "25 D always 20 D 13 D 32 A 7 D 33 D 14 D."

ACROSS

1. *First name of the author of our quotation.
6. Competition.
8. Albert's nickname.
9. Male pronoun.
11. To resist.
14. Grew old.
16. Food and Agriculture Organization (*abbrev.*).
17. This fowl lays eggs.
18. More cute.
20. Brooks or rivers.
22. Bushel (*abbrev.*).
23. The finish.
24. Pound (*abbrev.*).
26. Skill or knack.
28. Golfers drive off from it.
29. You hear with it.
31. Turf (rhymes with *cod*).
32. *Quotation word, meaning "correct."
34. Young male.

DOWN

1. Perform an action.
2. "A" before a vowel.
3. Vermont (*abbrev.*).
4. *Id est* (Latin), meaning "that is" (*abbrev.*).
5. Dental Surgeon (*abbrev.*).
6. Musical sign indicating the pitch of the notes.
7. *Quotation word, meaning "following after."
8. Advertisement (*abbrev.*).
10. Editor (*abbrev.*).
12. Something which is not imagined, but exists.
13. *Quotation word, "you are" (*contraction*).
14. *Quotation word, meaning "forward."
15. Microbe which carries diseases.
19. Between nine and eleven.
20. *Quotation word, meaning "certain."
21. You ride on this in snow.
22. Bachelor of Arts (*abbrev.*).
25. *Quotation word, meaning "exist."
27. Black, oily product of wood or coal.
28. Young child.
30. What Eve was made from.
31. Timid, bashful.
33. *Quotation word, meaning "proceed."

Answers this week in Teacher Edition; next week in your edition.

Answers to March 10 Quiz-word Puzzle

ACROSS: 1-fired; 6-Emerson; 8-A.L.; 9-as; 11-alas; 14-writ; 16-act; 17-oil; 18-heard; 20-beetles; 22-Ga.; 23-red; 24-he; 26-one; 28-doe; 29-dab; 31-eat; 32-round; 34-and.

DOWN: 1-F.M.; 2-i.e.; 3-R.R.; 4-es; 5-do; 6-Ella; 7-nail; 8-A.A.; 10-st.; 12-ache; 13-steer; 14-world; 15-ride; 19-ate; 20-band; 21-shot; 22-go; 25-E.E.; 27-ear; 28-dad; 30-boa; 31-end; 33-U.N.

take a fashion tip from a telephone teen

Ann's smart—she stitched some ball fringe to the collar and cuffs of last year's dress to give it a new fashion look!

And she was smart when she chose a career in the accounting department at the telephone company. She did not need experience and like all telephone jobs, hers is well paid and steady. Ann has only worked a short while, but she has already had her first raise.

Take a tip from Ann—with many different jobs at the telephone company, there may be one waiting for you!

BELL TELEPHONE SYSTEM

a good place to work

SOME FUN!

Starting School

Mother: "Well, Tommy, did you learn much on your first day of school?"

Tommy: "Not enough. I have to go back tomorrow."

Barbara Moon, McKinley School, Milwaukee, Wisc.

Really Silent

Jim: "Do you know what is the quietest game played?"

Bob: "No, what?"

Jim: "Bowling—you can hear a pin drop."

Dick Nicholson, Esperance Grade School, Edmonds, Wash.

The Deed Is Done

Henry: "Mother, do you remember that vase you always worried I'd break?"

Mother: "Yes, what about it?"

Henry: "Well, your worries are over."

Marjorie Dowling, West Lake (La.) High School

Who's Crazy Now?

A man riding horseback saw a little dog trotting along the road.

"Good morning," said the dog.

"Good morning," the man replied. As the dog went on down the road, the man remarked aloud, "I didn't know dogs could talk."

"I didn't either," agreed the horse.

Earl Lucas, Farragut School, Joliet, Ill.

Oversight

Bill: "How did you get your arm broken, Jim?"

Mark: "Do you see those stairs?"

Bill: "Yes."

Mark: "I didn't."

Jack Metalsky and Rodney Lewis, Queen Anne Pl. School, Los Angeles, Calif.

A New Look

Kay: "I finally found out what caused my freckles."

Betty: "What was it?"

Kay: "My dirty mirror!"

Rita Slaughter, Vivian (La.) H. S.

Handy Helper

Ad in newspaper: FOR SALE, black angora kitten. Will do light mousework.

Frank Fafar, Saint Francis Xavier School, Phoenix, Ariz.

Following Directions

Mother: "Where have you been, Ted?"

Ted: "Playing."

Mother: "But you were to beat the rug."

Ted: "No I wasn't, Mother. You told me to hang the rug on the line and beat it."

Judy Hodges, John Pitman School, Kirkwood, Mo.

Seafaring Man

Al: "So your dad's a dentist on an ocean liner?"

Pete: "Yes. He takes care of the captain's bridge."

Helen Collard, Robert E. Lee School, Dallas, Tex.

Perfectly Legal

Sue: "I turned the corner on two wheels."

Dick: "Didn't the police try to arrest you?"

Sue: "Why should they? I was on a bicycle."

Dalene Edelman, St. Lucie County Jr. H. S., Fort Pierce, Fla.

Stamping Ground

Uncle Ezra: "Say, Eph, what's Silas doing jumping up and down in his potato patch?"

Uncle Eph: "Oh, the silly fool's got some idea he's going to raise mashed potatoes."

Patsy Anker, Hermanstort School, Shawana, Wisc.

Special Delivery

Barry: "Did you hear about the man who crossed a carrier pigeon with a woodpecker?"

Mike: "No, what did he get?"

Barry: "A messenger that knocked on the door."

Joe Hartman, Gamerco (N. Mex.) School

Say It Again

Visitor: "What do you do with all the fruit that grows in your garden?"

Farmer: "We eat what we can, and what we can't we can."

Robert Pincus, P. S. 153, Brooklyn, N. Y.

Joke of the Week

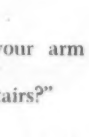
***Mrs. Jones*: "That wallpaper looks fine, but what are the funny bumps?"**

***Mr. Jones*: "Gosh! I forgot to take down the pictures."**

Wayne Hughes, Lowell School, Chicago, Ill.

MAGIC "WONDERS OF CHEMISTRY" SHOWS HOW TO AMAZE YOUR FRIENDS

Get This FREE BOOK!



You can perform eye-opening feats of chemical magic . . . like changing a dime to a penny, or stretching an egg! Book tells how you can do many exciting home experiments. Describes the fun, thrills and adventure you can have with an exciting new Chemcraft chemistry outfit of your own. Write for your free book today!

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BE SURE IT'S ..... CHEMCRAFT

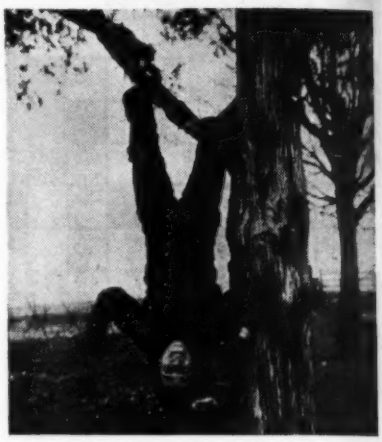
HEY-LOOK!

$5 U.S. STAMPS
AIR MAILS
COMMEMORATIVES
Hi-Values

For 10c, yes! Only one dime we will send you an assortment of all U.S. Stamps, for your collection. BE SURE to ask for lot 20 approvals.

IRWIN STAMP CO.
Box 11-62, Brooklyn 30, N. Y.

Send the best snapshots you have taken to Shutterbug Editor, Junior Scholastic, 33 West 42 St., New York 36, N. Y. If your picture is good, you will receive a Shutterbug button.



OUT ON A LIMB. Photo by Jake Book of Cleveland School, Dayton, Ohio.

LOOK BEFORE YOU LEAP. Taken by Jack Marshall, Madeira (Ohio) School.

SPECIAL PALS. By Jim Mitchell, Shelbyville (Tenn.) Junior High School.

How's your Health?

IF YOU have any questions about improving your health and appearance, send them to: Carol Ray, "How's Your Health?" Editor, *Scholastic Magazines*, 33 West 42nd St., New York 36, N. Y. Problems of greatest interest will be discussed in this column.

The Question Box

Q. My problem is what makes a good breakfast but a quick one? I usually don't have much time for breakfast before school, but my mother insists that I eat it.

A. Your mother is right. You wouldn't think of going to school half-dressed, so you allow enough time to get ready. Just so, you must allow time for breakfast by getting up a few minutes earlier. The breakfastless student is "half-dressed" nutritionally, and unprepared to do a good morning's work. A basic breakfast of fruit or juice, cereal, bread and butter, and milk takes about ten minutes to eat. Those ten minutes are an investment in health, vitality and good looks, to say nothing of improved grades. If you've been skipping breakfast for a long time, you may not be able to eat much at first. Start with small quantities of food and build up the portions. Soon you will find that you're just as hungry for breakfast as you are for your other meals.

Q. How do macaroni, rice, and potatoes compare in calorie content?

A. A cup of plain cooked macaroni has 210 calories; a cup of plain boiled rice has 205 calories; a cup of plain diced boiled potato (equal to one medium potato) has 105 calories.

Q. My trouble is headaches. I get one almost every day. I have a good appetite. What should I do about this?

A. Better see a doctor. Headaches are a symptom of disorders ranging from eyestrain to food allergies. Only a medical checkup can determine their cause. Don't depend solely on aspirin or headache powders; they may relieve the pain, but the cause of the headaches will not be corrected.

• • •

Inside Stuff. . . . So much attention is paid to the external care of the skin that we sometimes forget the part that the foods you eat play in keeping the complexion clear.

During the teen years especially, the skin may break out in pimples. In addition to immaculate cleanliness, your choice of foods may help to relieve the condition:

Meats and Fish. Eat *lean* meats and fish only; cut away the fatty part of meat. Skip fatty pork and sausages, spicy delicatessen, fried meats and fried fish.

Eggs. Any style except fried are good.

Cheese. Fresh cheeses (except cream cheese) are best, with top honors going to cottage cheese. Avoid fatty and fermented cheeses.

Milk. Do not drink chocolate milk. In severe acne cases, skim milk and buttermilk are sometimes recommended as they are practically fat-free. Otherwise whole milk is okay.

Cream and Butter. Put milk, instead of cream, on cereals. Use butter and margarine sparingly.

Bread and Cereals. Choose whole grain or enriched varieties.

Vegetables. Eat at least two generous servings daily—one of them green. Fried vegetables are not for you. Have a good-sized raw salad for lunch or dinner, or eat some raw vegetables like tomatoes, celery, carrots, etc., out of hand.

Fruits. Eat plenty of fruit every day, some of it raw. Do not add sugar to cooked or canned fruit or to fruit juices.

Sweets. Your best bets for desserts are simple ones like fruit cups, gelatin and custards. Occasionally treat yourself to plain vanilla or fruit ice cream or sherbet, with a piece of plain cake.

• • •

A Deep Breath. . . . After intensive studying—or any concentrated activity—a good way to relax is through deep breathing. Open the window and stand in front of it. Inhale as deeply as you can. Exhale, slowly but thoroughly, letting the air come out in a little hiss through your teeth, or through pursed lips. Do this several times, rhythmically, and you'll feel like a new person. Deep breathing is also a good way to get rid of a depressed, let-down feeling, because a fresh supply of oxygen helps perk up your spirits by toning up your whole system.

BAD SKIN?
Here's help in a hurry!

Boys! Girls! Let's face it! About the only kind of party you can enjoy when your skin breaks out in spots—is a masquerade! And that's no fun when the masks come off!

If a teen-age skin problem threatens to cheat you out of your rightful share of popularity and admiration, don't give up! Here's a wonderful new way to help heal externally-caused blemishes, *fast!* The first step is *washing* your face with *greaseless, medicated* Noxzema and water!

Feel the refreshing tingle! The moment you apply Noxzema you feel a cool tingle that tells you Noxzema's famous medicated formula is starting to work on your skin problem — helping skin look smoother, fresher, more attractive.

1 START TONIGHT! Apply Noxzema liberally; wring out a cloth in warm water; then wash as if using soap. How CLEAN your skin looks! How much better it feels! Not dry or drawn!

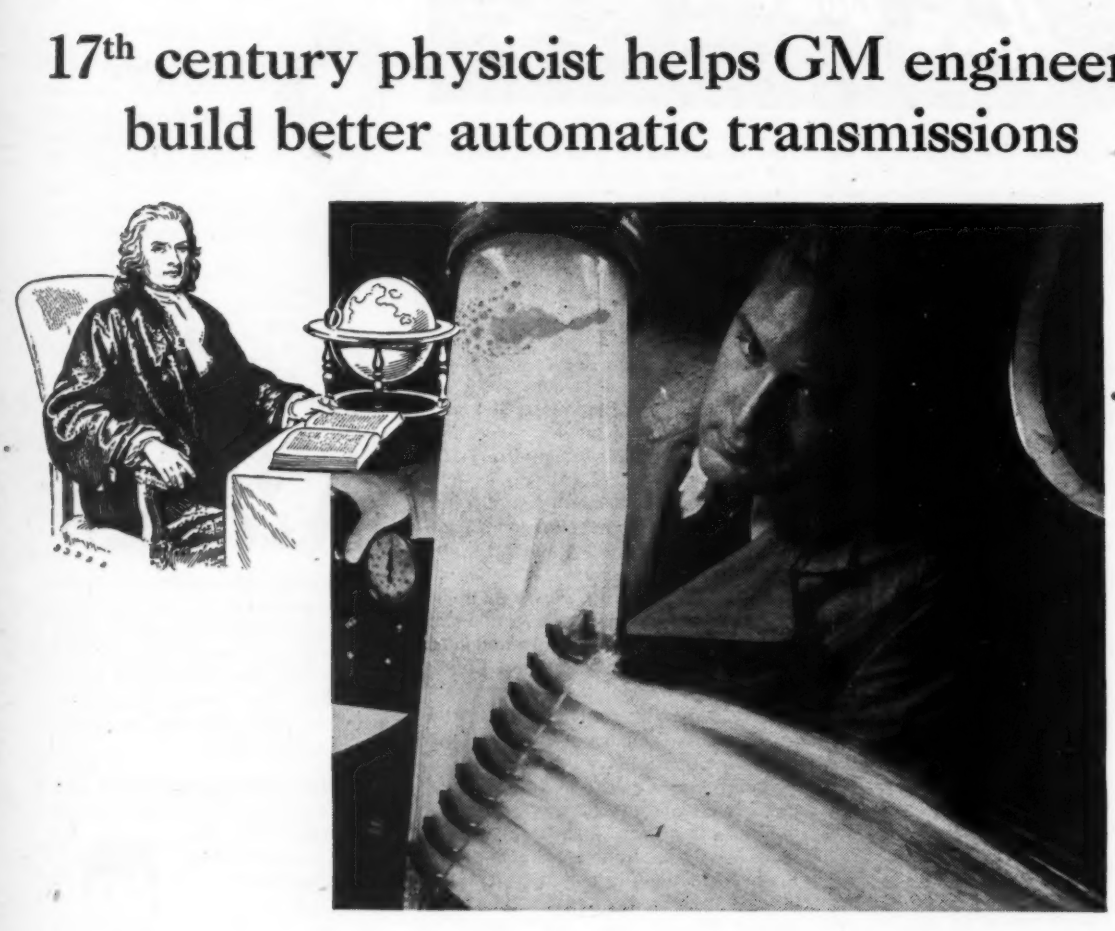
2 HELPS HEAL while you sleep! Spread *medicated* Noxzema over your face and pat a bit extra on any externally-caused blemishes to help heal them fast! Noxzema is *greaseless!* Won't stain pillow!

3 WASH again in the morning with water and Noxzema. Then apply *medicated* Noxzema over your whole face, to soothe and protect your skin all day! It's *greaseless!* Doesn't show!

Generous trial offer! Get 40¢ size jar of Noxzema for only 29¢ plus tax! At drug, cosmetic counters. After using this trial jar, get economical 10 oz. Noxzema for only 89¢ plus tax.

NEWS FOR SCIENCE STUDENTS!

17th century physicist helps GM engineers build better automatic transmissions



Better read your textbooks carefully.

Those textbook pages carry plenty of meaning for the modern engineer.

Take the law of Isaac Newton, discovered way back in the 17th Century—that the "force is proportional to change in motion."

Much of General Motors engineering in the field of torque converter type transmissions like Buick's Twin-Turbine Dynaflow is based on that three-hundred-year-old discovery.

For instance, the forces developed by the turbine blades in a torque converter are proportional to the change in motion of the oil flowing between them at velocities as high as three thousand gallons per minute.

So to test blade designs for desired performance and efficiency, General Motors engineers constructed the transparent device shown in the picture. Here high velocity water flow is observed for proper streamlines, while the force and change in motion are accurately measured. A quick way to find which blades do the best job.

We point this out merely as another of the many, many daily examples of how our engineers make use of textbook fundamentals to help design better General Motors automobiles.

Yes—better read those science textbooks carefully. Between their covers is the knowledge which can lead you to a fine future as an automotive engineer.

GENERAL MOTORS

"More and Better Things for More People"

Your Key to Greater Value — The Key to a General Motors Car

CHEVROLET • PONTIAC • OLDSMOBILE • BUICK • CADILLAC • BODY BY FISHER • FRIGIDAIRE • GMC TRUCK & COACH • GM DIESEL
UNITED MOTORS SERVICE • AC SPARK PLUGS

Hear Henry J. Taylor, on the air every Monday evening over the ABC Network, coast to coast.

A Lesson Plan Guide for "Why Read?"

Aims

To emphasize the importance of reading as a communications skill, essential (1) as a tool for citizens in a democracy who must be well informed and think straight if the free world is to defend itself successfully; (2) as a tool for getting ahead in business and industry; and (3) as a rewarding and enjoyable leisure-time activity.

Motivation

If you can read your assignments in half the time it takes others, what advantage do you have? Is reading merely a school skill that can be discarded in the business world? Or is it a skill essential to success in most fields of endeavor? What successful workers do you know who need to do no reading at all? What kind of reading must a service station operator do? A truck driver? A waitress?

Procedure

Study "Why Read?" prepared by the General Electric Co., and discuss the major points made, using this outline: What types of reading will you be expected to do for each of the following?

1. *Business world*—especially for the work you're considering as a career. (Employment application form, bulletins and announcements, company rules, letters, etc.)
2. *Citizenship and straight thinking.* (The reading you'll do to be well informed on local, state, national, and world affairs—so that you can get the facts and make up your own mind.)
3. *Social world.* (The reading you'll do to know what your friends are talking about when they discuss business, science, books, art, music, life in general.)
4. *Home work.* (The "how to" reading you'll do so that you can make or do things—cooking, sewing, carpentry, etc.—for your home.)
5. *Hobbies and enjoyment.* (The reading you'll do to know more about your hobby—photography, stamps, etc., and the reading you'll do for the sheer joy of reading.)

Discussion Questions

How can you become a better reader? Why is being able to understand what you read even more important than being a speed reader? What are the three speeds of reading and when do you use each? (Studying, rapid reading, and skimming.) How good a reader should you be in order to guarantee success in college?

In what sense is the General Electric Co. like a school or college? How will the ability to read well help you to get ahead in industry? How can reading help to make you a thinker instead of a "yes" man? What does this statement mean: *We are what we read*?

"AD WISE"

A number of advertisements in this special industry issue were prepared especially on the theme of "Our Faith in Your Future." They tell what industry is doing to meet the needs of a rapidly growing America. Students may glean much information on industrial development and on vocational opportunities in industry by studying these ads. (*Junior Scholastic* doesn't carry the Mutual Benefit or the Union Carbide ad.)

1. *Mutual Benefit Life Insurance advertisement:* What kinds of life insurance pay you benefits while you're still living? Why was life insurance originated? What fact indicates that "living insurance" is especially popular?
2. *Du Pont advertisement:* Why is an adequate supply of trained scientists and engineers essential for the growth of the chemical industry? How is the laboratory scientist helping the growth of American industry? Why is titanium so important in the aviation and other industries? How does 3-D give the impression of depth in movies?
3. *Union Carbide and Carbon advertisement:* In what ways were Franklin, Fulton, Lincoln, Bell, and Willard geniuses? What opportunities do youth have in the business world and the professions of tomorrow? How is Union Carbide helping able young people? How can you learn more about Union Carbide scholarships and fellowships?
4. *Sinclair advertisement:* What program does Sinclair have to demonstrate its faith in youth's future? In what field is Earl Huyser specializing? What kind of work-study day does Earl have? How is "pure" research different from commercial research? What is Sinclair's Plan for Balanced Progress? Why does business give scholarships to able youth?
5. *U. S. Steel Corp. advertisement:* How is U. S. Steel proving its faith in your future? What is U. S. Steel doing to improve its facilities this year? What goal did it realize in 1953? What is taconite and where does it come from?
6. *Bell Telephone System advertisement:* Why was Ann wise to choose a career with the telephone company?
7. *General Motors advertisement:* Why should you read science texts carefully if you want to be an automotive engineer? How does General Motors test blade designs for desired performance and efficiency?

Off the Press

Compton's Pictured Encyclopedia and Fact-Index. 15 volumes; about 400 to 600 pages each. F. E. Compton & Co., Chicago 10. $109.50.

This new edition of *Compton's Pictured Encyclopedia* maintains the usual high standards of readability and scholarship. The 15 volumes, with subjects arranged alphabetically, are characterized by abundant illustrations in black and white with many in color.

Elementary school students who are faced with the traditional unit on the American Indian will find the clear print and language of this encyclopedia understandable. Students in the upper grades and high school will find a wide range of material in the newly revised article on India. Among other new contributions, which help to explain the addition of some 200 pages to the current edition, are those on Vocations, Thomas Jefferson, Dogs, Missouri River, Chicago, and Arithmetic. The fact-index at the back of each volume offers a quick guide to more detailed treatment.

A Court for Children. A Study of the New York City Children's Court, by Alfred J. Kahn. Columbia University Press, N. Y. 359 pp., $4.50.

"The juvenile court movement presented society with a dream and a challenge," writes Dr. Kahn, who holds the first doctorate in social welfare granted in New York State. That the dream is at variance with reality is made clear in this on-the-scene study of New York City's Children Court.

Each year the overburdened New York court handles more than 7,000 children under 16. "A minority of the children are served with both kindness and skill by those judges, probation officers, and other staff members who have understood the purpose of a children's court. . . . The majority . . . receive service which does not reflect the juvenile court movement's aspirations . . .," according to Dr. Ka

In this comprehensive and readable study, Dr. Kahn views delinquents—a term he does not like—as troubled children whose behavior is symptomatic of underlying causes. Dr. Kahn observed judges, probation officers, attendance officers, medical personnel, and others at their work. His evaluation of case reports adds substance to some of his generalizations about the court's inadequacies. Cognizant of the community's unwillingness to finance the improvements urged by some judges, Dr. Kahn is firm but fair in his findings. His recommendations invite remedy rather than antagonism.

—Howard L. Hurwitz

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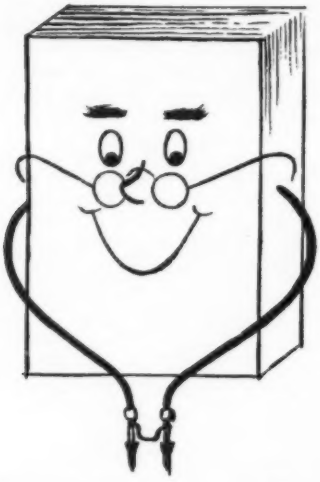

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